DATA CENTERS AND THE CLOUD, PART II: THE FEDERAL GOVERNMENT'S TAKE ON OPTIMIZING NEW INFORMATION TECHNOLOGIES OPPORTUNITIES TO SAVE TAXPAYERS MONEY

HEARING

BEFORE THE

SUBCOMMITTEE ON GOVERNMENT OPERATIONS

OF THE

COMMITTEE ON OVERSIGHT
AND GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

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DATA CENTERS AND THE CLOUD, PART II: THE FEDERAL GOVERNMENT'S TAKE ON OPTIMIZING NEW INFORMATION TECHNOLOGIES OPPORTUNITIES TO SAVE TAXPAYERS MONEY

Thursday, July 25, 2013,

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON GOVERNMENT OPERATIONS,
COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM,
Washington, D.C.

The subcommittee met, pursuant to call, at 9:34 a.m., in Room 2154, Rayburn House Office Building, Hon. John Mica [chairman of the subcommittee] presiding.

Present: Representatives Mica, Meadows, Connolly, and Pocan.

Staff Present: Alexia Ardolina, Majority Assistant Clerk; Richard A. Beutel, Majority Senior Counsel; Caitlin Carroll, Majority Deputy Press Secretary; John Cuaderes, Majority Deputy Staff Director; Linda Good, Majority Chief Clerk; Tyler Grimm, Majority Professional Staff Member; Mark D. Marin, Majority Director of Oversight; Sarah Vance, Majority Assistant Clerk; Jaron Bourke, Minority Director of Administration; Adam Koshkin, Minority Research Assistant; Safiya Simmons, Minority Press Secretary; and Cecelia Thomas, Minority Counsel.

Mr. MICA. Good morning. I would like to call this hearing of the Subcommittee on Government Operations to order.

Welcome, everyone, this morning. The topic of today's hearing is Data Centers in the Cloud, Part II: The Federal Government's Take on Optimizing New Information Technologies and Opportunities to Save Taxpayers Money.

Mr. Issa usually gives a little statement of our mission, but that title almost sums it up. We are looking and have the responsibility to review various operations of the Federal Government and representing the taxpayers; looking for the most efficient, economical, and responsible means of carrying out the positions and conducting proper oversight of the agencies that perform those responsibilities.

Today we have one panel and three witnesses. We welcome them. And our order of business will be as follows: we will start with opening statements by members and then we will proceed to hear from our three witnesses, and after that we will move to questions. We will hold the questions until we have heard from all of the panelists.

With that, I will recognize myself for an opening statement and then turn to our Democrat leader, the ranking member, Mr. Connolly, for his comments.

I again have to state that our responsibility is that we look at what the various agencies are doing, in particular, some of this activity of our subcommittee may not be the flashy part of serving in Congress, with the hearings and all of the cameras and all of that, but, nonetheless, this is probably as important a responsibility as we have. This is the meat and potatoes, finding out where the money is being spent.

On the particular program of IT, we spend a lot of money. It is estimated, I think, $84 billion annually. And we have had witnesses. This is our second hearing. Unfortunately, we didn't have OMB and GSA representatives at the last hearing; I am glad they came this time. But because, again, of the sheer size and scope of this activity, the estimates, again, of potential savings are maybe as much as 50 percent of what we are currently saving. If we can consolidate, if we can use the mechanism of cloud computing, a whole host of efficiencies brought into this process, we have the potential for saving in a time when we are approaching a $17 trillion deficit. Substantial money.

So I again welcome the witnesses. As we face this time of tight budgets, it has never been more important for the Federal Government to continue its efforts.

Today's hearing actually looks at, unfortunately, an attempt by the Administration, dates for several years now in trying to maximize the return on investment and reduce the operational risk and provide responsive services to citizens through some IT consolidations. We, unfortunately, have found through our investigation that we don't have a pretty good track record; that maybe the intent was good, but unfortunately what was set out as some goals and new approaches to achieve success, have not worked.

We have two charts here that I want to point to, and they show, unfortunately, failed IT investments since 2003. The long and the short of it is we have lost about $9.2 billion in those failed attempts, a pretty significant amount.

The second chart shows the number of troubled IT investments. That is enumerated on the chart that you see up on the screen. But this is startling: $102 billion is currently at risk from, again, a simple evaluation information we have received. So this is quite troubling.

While GAO had indicated initially that we had some I think it was 3,133 data centers, the most current data we have received says that that estimate is some now 7,145. So a pretty dramatic departure from what was originally estimated as the number of these non-core centers; and that totals 6,650.

Unfortunately, since 2010 they have closed or consolidated 484 of these non-core centers. At the current rate, and that is over two years, while they estimate by the end of the year they will have 855. But they plan, at least the plans we have been told, to close 3,400, about half of the new estimate non-core. Unfortunately, if they keep it up at the pace that they have begun, it looks like it is almost impossible to achieve that goal. That is part of what we want to hear, how we are recalculating and how we plan to again

reach a significant goal, which was originally estimated, I think, at some $3 billion. The current calculations indicate that we will be at a $2.4 billion shortfall.

Unfortunately, the duplications of common IT systems are pretty widespread, and GAO itself has reported that the Government funded 622 separate human resource systems at a cost of $2.4 billion, 580 financial systems at a cost of $2.7 billion, and 777 supply chain systems at $3.3 billion; and the list continues. Many of these systems perform, unfortunately, the same function.

OMB has the responsibility to oversee large IT projects, but often rolling out new and large management initiatives, when they do with great fanfare, unfortunately it doesn't appear a lot is done to follow up or implement these programs; and we are going to look at one example, the Federal Data Center Consolidation Initiative, which was rolled out again in 2010. As I point out and predicted, they close a lot more of these centers, 40 percent of them, by 2015 and save that $3 billion. The target is, again, very illusive from what we can see with the statistics and facts of accomplishment to date.

So OMB, unfortunately, has grossly underestimated the number of data centers. Now we have to deal with a much larger number than originally reported. Unfortunately, OMB's savings to date are minimal, probably about $300 million, or 10 percent of the promised $3 billion that had been promised.

Unfortunately, we also find that OMB is also skeptical about their own new process and how it will work. Its own testimony identifies deficiencies, and we will look at how that IT Dashboard hasn't worked. We will also have to find out, firsthand today, how OMB plans to accelerate its use of key management initiatives and look at how, again, we are going to achieve these savings. So we want this to be a positive hearing; find out, again, what has gone wrong, and then see how we can correct it.

We want to work with OMB and GSA. Unfortunately, GSA, I found, has failed to develop or roll out its own critically needed new system to streamline the fashion by which contracting officers ensure contracts are responsible vendors. That system, called SAM, System for Award Management, was completely restructured after multiple failures and millions of dollars wasted.

And then, finally, what the GSA, I think they set a poor example themselves with over 109 core data centers. I am told they have only actually closed one to date. So we will want to get an update on where one of our principle agencies responsible for procurement and heavy involvement in the IT business has failed itself.

So those are some opening commentaries. I have been picking up from Mr. Issa and also Mr. Connolly their efforts to try to get this to work better, be more effective, find ways to consolidate, find ways to streamline and provide the leadership to make that happen.

So let me yield now to Mr. Connolly, our ranking member.

Mr. CONNOLLY. Thank you, Mr. Chairman, and thank you and your staff for holding this second hearing on this subject. And I agree with you, this is the sexiest subject in town. Data center consolidation, it is amazing the press just isn't here in overflow, really.

But it actually is one of those building blocks, as you said, Mr. Chairman, of Government that is actually very important.

First of all, I want to welcome our witnesses. I am glad they are here. Some of the things that have happened since our field hearing, one of which is Mr. VanRoekel is now at OMB. So that, to me, is a heartening development because I think now we can better integrate OMB's management responsibilities with the goals we have here, rather than sort of as a set-aside nice thing to do. So integrating that into key management decision-making in the Executive Branch I think is a real step forward.

Mr. VanRoekel, congratulations on that new role. I know that is going to serve all of us well.

From my point of view, and I certainly am open to testimony that would suggest otherwise, I share the chairman's concern that we seem, when we are looking at metrics, and it isn't just our opinion, it is the Government Accountability Office, we seem to be falling behind. Good news: we have doubled the number of companies certified under FedRAMP since our field hearing, from three to six. But there are a lot of companies that would like to qualify and that would qualify but for a rather glacial pace of certification. We want to be thorough, but golly, gosh, darn, it seems to me we could do better.

There are issues, as the chairman indicated, with the IT Dashboard. And in terms of data center consolidation, any way you measure it, we may be more accurate in defining what a data center is and, thus, the proliferation in numbers that might seem to suggest we are actually going in the wrong direction but in fact we are more accurate in trying to capture what is a data center, and that is good. But if you look at agency performance, agency by agency, essentially only four agencies are playing in the game, that is not acceptable. That is not acceptable.

Finally, I would say to the Administration, and I guess Mr. VanRoekel, primarily through you as maybe the senior Administration official here, but this committee, including the chairman, passed a bill, FATAR. It is the first comprehensive rewrite of Federal IT acquisition in 20 years. It is designed to update and, in many ways, sort of replace Clinger-Cohen. It is the friendliest, most sympathetic bill you are going to get out of the Congress. It is, in large measure, a codification of, in fact, initiatives and reforms undertaken by this Administration, mirabile dictu coming out of this Republican Congress.

But if the Administration decides to spurn that legislation, that has passed the House already, I would just say to you you are going to have problems on both sides of the aisle. This represents, I think a real bipartisan effort. We work very hard to try to get this right. We tried to consult with the Administration. We consulted extensively with industry.

The chairman, Mr. Issa, could have filed this bill back in October. To his credit, to the staff's credit, they kept it open, negotiating with us, with industry, with the Administration, with others from October until we filed it finally late in February. And we were willing to take additional modifications to try to make sure we get it right. This is a bill designed to try to be helpful, to try to spur

the very reforms undertaken by this Administration, by Mr. VanRoekel and his predecessor.

So I urge you to go back and consider support for this legislation. If there are changes, great, but a position of opposition is not going to sit well in this Congress on both sides of the aisle. So please consider it the helpful tool it was intended to be. We think that this is a subject matter that needs attention. And while it may not draw big crowds, as the chairman indicated, in terms of potential for savings, potential for the deployment of technology as a tool, an instrument for augmenting the decline in resources for so many agencies is profound; and we need you as a partner and we want to be a partner.

So, with that, I look forward to the testimony, Mr. Chairman, and, as you know, I may have to sneak out to manage an amendment on the floor, but I will be back. And again I thank the chair for holding this hearing.

Mr. MICA. Thank you, Mr. Connolly.

Other members? Mr. Meadows?

Mr. MEADOWS. Thank you, Mr. Chairman. I am just going to be very brief.

Welcome. Thank you so much. The chairman has highlighted very accurately some of the concerns. I look forward to hearing your testimony today on how we can start to really make progress. As I read the report, I am very troubled that we continue to start and we restart and we start again, and yet the other part that we are not doing is, when we are looking at $3 billion in program goals, there is not really a measurable matrix on whether we are getting there or not. And it is very troubling when I sit there as a business guy and say, well, how do we know if we are making great progress when we are not even really accurately measuring it.

I represent a district that has one of the greatest data centers in the world, Google. They know how to do it. And to find that we have 622 human resource systems out there, another 580 financial management systems, and 777 supply chain systems, many of which don't talk to one another, one of the advantages of big government should be the efficiencies of systems and the management thereof; and what we have done is we are acting like we are a private company with thousands of different systems that don't work.

So I look forward to hearing it. I know that we have a Leviathan here. I mean, this is a big problem. But the other aspect, it is very difficult for me to go back home and tell the people why we have wasted $10 billion on terminated projects; why we can't figure it out on a lot of these before we spend the amount of money that we spend, before we make a determination it is not going to work. So I would be interested in hearing from each one of you the matrix of which we are going to be measuring it, the goals that we are going to do, and how we incentivize you to do that.

The chairman has held a hearing on some 13,000 Federal buildings, and we heard that the GAO really didn't want to get rid of them because, if the money gets sold, it doesn't go back to the GAO. I mean, I also am finding it amazing that we have most of our expenditures in the fourth quarter; that we have this dis-

proportionate amount of purchases that happens in the last quarter of every fiscal year.

We all know what the problem is, but it really lacks accountability. So I look forward to hearing from you on how we are going to measure it and how we are going to fix it going forward, and I thank the chairman. I yield back.

Mr. MICA. I thank the gentleman.

Other members? Mr. Pocan, welcome.

If no other members seek recognition, we will turn to our panel of witnesses, and, again, we have three witnesses, and welcome them.

First we have Mr. David Powner. He is the Director of Information Technology Management Issues for GAO, the Government Accountability Office; Mr. Steven VanRoekel. He is the Acting Deputy director for Management and Federal Chief Information Officer for the Office of Management and Budget; and Mr. David McClure is the Associate Administrator of the General Services Administration's Office of Citizen Services and Innovative Technologies.

Welcome to the witnesses.

This is an investigative and oversight committee of Congress and, in light of that, we do swear in our witnesses. If you will stand, raise your right hand.

Do you solemnly swear or affirm that the testimony you are about to give before this subcommittee of Congress is the whole truth and nothing but the truth?

[Witnesses respond in the affirmative.]

Mr. MICA. Let the record reflect that the witnesses have responded in the affirmative.

So I welcome you and we will turn to our first witness. We will go to GAO first, Mr. David Powner. You are welcome and recognized.

What we usually do is, it is a small panel today, but try to keep it to five minutes. Then we will go through the three of you and then come back for questions.

So welcome again, Mr. Powner. You are recognized.

STATEMENT OF DAVID POWNER

Mr. POWNER. Chairman Mica, Ranking Member Connolly, and members of the subcommittee, we appreciate the opportunity to testify on the Federal Government's efforts to better manage its annual $80 billion investment in IT. My comments will focus on three areas: one, the Federal Government's poor track record when it comes to delivering on large-scale IT acquisitions and the need for greater transparency and governance; two, the importance of the data center consolidation effort; and, three, the need to eliminate duplicative IT spending.

Fortunately, for each of these three areas, poor delivery, unused data center capacity, and duplication, OMB has excellent initiatives in place. GAO's work over the years has shown that the Government has a poor track record when it comes to managing and delivering IT acquisitions. My written statement lays out a comprehensive list of the many failed and troubled projects that are highlighted here. Specifically, 15 of these projects are examples

where billions of taxpayers' dollars have been wasted, with little to show for it.

To address this situation, OMB rolled out the Federal IT Dashboard in 2009 to improve the transparency of approximately 700 major IT investments, and since 2010 this information has been used to hold TechStat sessions to terminate and turn around IT investments that are failing and not producing results. This increased transparency has resulted in improved governance, reduced scope, and even terminated projects.

Clearly, the Dashboard and TechStat sessions have made a difference, but this is not enough because some agencies are still not reporting Dashboard information accurately. In particular, DOD is reporting no red investments. We have highlighted DOD's inaccurate reporting at multiple hearings and will continue to do so. When an agency is spending $34 of the $80 billion and not reporting accurately, something needs to change to make sure our tax dollars are being appropriately overseen. Also, DOD has not updated most of their Dashboard CIO ratings for about two years.

Regarding the TechState sessions, our work shows the number of TechStats held to date is relatively small compared to the currently reported 160 at-risk investments that total $10 million.

So for troubled projects we need more accurate transparency on the Dashboard and even greater executive oversight.

Turning to data centers. This consolidation effort was initiated to improve the Government's low server utilization rates, which was estimated between 5 and 15 percent, far below the goal of 60 to 70 percent; and this effort is to result in $3 billion in savings. Data center closures to date and those planned are promising. About 500 centers have been closed and it is expected that over 800 will be closed by September. In addition, some agencies are already reporting savings. The Department of Agriculture recently reported that it has saved $50 million this year, and DOD plans to save $575 million in fiscal year 2014 alone.

Our report recently delivered for this committee showed that OMB, GSA, and the Data Center Task Force need to step up efforts to track cost savings and to find metrics for those centers that remain. In fact, OMB has not been tracking cost savings. FATAR would be extremely helpful, since it requires the tracking and report of cost-savings and would ensure that this important initiative would span multiple administrations.

Mr. Chairman, in addition to tracking cost-savings, there needs to be better transparency on how many centers are out there. When we testified before this subcommittee in May, we reported that there were about 3100 data centers Government-wide, only to learn from our audit work that the Government had 3,000 additional centers. Last week, OMB briefed congressional staff that there are actually 4,000 more centers, bringing the total to more than 7,000; and there are some fundamental questions whether the Government really knows what it has and why there isn't better transparency here. Timely transparency on how many data centers are out there, closures, and cost-savings is needed.

We also need to tackle duplication more aggressively. The Administration's PortfolioStat process is an excellent initiative to address this duplication. OMB states that the Portfolio results so far

have been significant and that agencies have identified nearly 100 opportunities to consolidate or eliminate duplicative investments that is to result in savings of approximately $2.5 billion through 2015.

The latest PortfolioStat initiative is promising if carried out effectively. However, I would like to make two specific observations regarding it: savings are much higher than $2.5 billion and are more in the $5 billion to $6 billion range; and, secondly, CIO authorities need to be strengthened at many agencies if CIOs are to carry this out. We are currently learning that not all CIOs have authority over commodity IT, which is not a very high bar.

In summary, many of the initiatives over the past years have great promise; however, each requires more leadership from OMB and agency CIOs so that billions of taxpayers' dollars are not wasted.

Chairman Mica, Ranking Member Connolly, this concludes my statement. I look forward to your questions.

[Prepared statement of Mr. Powner follows:]

United States Government Accountability Office

GAO

Before the Subcommittee on Government Operations, Committee on Oversight and Government Reform, House of Representatives

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INFORMATION TECHNOLOGY

OMB and Agencies Need to More Effectively Implement Major Initiatives to Save Billions of Dollars

Statement of David A. Powner, Director
Information Technology Management Issues

GAO Highlights

Highlights of GAO-13-796T, a testimony before the Subcommittee on Government Operations, Committee on Oversight and Government Reform, House of Representatives

Why GAO Did This Study

The federal government reportedly plans to spend at least $82 billion on IT in fiscal year 2014. Given the scale of such planned outlays and the criticality of many of these systems to the health, economy, and security of the nation, it is important that OMB and federal agencies provide appropriate oversight and adequate transparency into these programs. Nevertheless, IT projects too frequently incur cost overruns and schedule slippages, and result in duplicate systems while contributing little to mission-related outcomes. Additionally, projects sometimes fail or operate inefficiently, at the cost of billions of dollars.

GAO was asked to testify on the results and recommendations from its selected reports that focused on key aspects of the federal government's management of IT investments. To prepare this statement, GAO drew on previously published work, as well as ongoing follow-up on prior recommendations.

What GAO Recommends

GAO has issued numerous recommendations to OMB and agencies on key aspects of IT management, including OMB's public website, known as the IT Dashboard, which provides detailed information on federal agencies' major investments; reviews of underperforming projects, known as TechStats; and efforts to consolidate federal data centers.

View GAO-13-796T. For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

July 2013

INFORMATION TECHNOLOGY

OMB and Agencies Need to More Effectively Implement Major Initiatives to Save Billions of Dollars

What GAO Found

GAO has issued a number of key reports on the federal government's efforts to efficiently acquire and manage information technology (IT). While the Office of Management and Budget (OMB) and federal agencies have taken steps to address underperforming IT projects and more effectively manage IT through a number of major initiatives, additional actions are needed. For example, OMB has taken significant steps to enhance the oversight accountability of federal investments by creating the IT Dashboard, an OMB public website which provides detailed information on federal agencies' major investments. However, GAO previously found there were issues with the accuracy and reliability of cost and schedule data in the Dashboard and recommended steps that OMB and agencies should take to improve these data—this is important since the Dashboard currently reports 154 investments totaling almost $10.4 billion being at risk. OMB agreed with the recommendations.

GAO recently reported that OMB and selected agencies have held multiple reviews—known as TechStats—of selected investments that are failing or are not producing results. Positive outcomes have been tracked and reported from these reviews, with most producing improved governance, as well as projects with accelerated delivery, reduced scope, and termination. However, for the selected agencies, GAO found that the number of at-risk TechStats held to date was only about 33 percent of the current number of medium- and high-risk investments. GAO was also unable to validate OMB's reported results of almost $4 billion in life-cycle cost savings. GAO therefore recommended that OMB validate the resulting cost savings and require agencies to conduct TechStats for each investment rated with a moderately high- or high-risk rating on the IT Dashboard. OMB generally agreed with the recommendations.

GAO has also issued several reports on the federal government's progress towards consolidating its growing number of data centers. Most recently, in April 2013, GAO reported that agencies closed 420 data centers by the end of December 2012; however, OMB had not tracked and reported on other key performance measures, such as progress against the initiative's cost savings goal of $3 billion by the end of 2015. In addition, GAO identified weaknesses that existed in the oversight of the data center consolidation initiative, including not ensuring the completeness of agencies' data center inventories and consolidation plans. GAO recommended that OMB track and report on key performance measures and improve the execution of important oversight responsibilities. OMB agreed with these recommendations.

In March 2012, OMB launched PortfolioStat, which requires agencies to conduct annual reviews of its IT investments and make decisions on eliminating duplication, among other things. OMB believes this effort has the potential to save $2.5 billion over the next 3 years. OMB has since made significant changes to PortfolioStat in March 2013, including integrating it with its data center consolidation initiative and establishing new reporting requirements. However, GAO recently reported that OMB had not yet established revised data center metrics and goals for the combined initiative. GAO has ongoing work looking at PortfolioStat, including determining whether agencies are completing key actions.

Chairman Mica, Ranking Member Connolly, and Members of the Subcommittee:

I am pleased to be here today to discuss the highlights and recommendations of our selected reports that focused on key aspects of the federal government's acquisition and management of information technology (IT) investments. As reported to the Office of Management and Budget (OMB), federal agencies plan to spend at least $82 billion on IT in fiscal year 2014. Given the scale of such planned outlays and the criticality of many of these systems to the health, economy, and security of the nation, it is important that OMB and federal agencies provide appropriate oversight and transparency into these programs and avoid duplicative investments, whenever possible, to ensure the most efficient use of resources.

As we have previously reported, federal IT projects too frequently incur cost overruns and schedule slippages while contributing little to mission-related outcomes.[1] During the past several years, we have issued multiple reports and testimonies on federal initiatives to acquire and improve the management of IT investments.[2] In those reports, we made numerous recommendations to federal agencies and OMB to further enhance the management and oversight of IT programs.

[1]See, for example, GAO, *Information Technology: Better Informed Decision Making Needed on Navy's Next Generation Enterprise Network Acquisition*, GAO-11-150 (Washington, D.C.: Mar. 11, 2011); and *Border Security: Preliminary Observations on the Status of Key Southwest Border Technology Programs*, GAO-11-448T (Washington, D.C.: Mar. 15, 2011).

[2]See, for example, GAO, *Information Technology: Additional Executive Review Sessions Needed to Address Troubled Projects*, GAO-13-524 (Washington, D.C.: June 13, 2013); GAO, *Data Center Consolidation: Strengthened Oversight Needed to Achieve Billions of Dollars in Savings*, GAO-13-627T (Washington, D.C.: May 14, 2013); *Data Center Consolidation: Strengthened Oversight Needed to Achieve Cost Savings Goal*, GAO-13-378 (Washington, D.C.: Apr. 23, 2013); *Information Technology Dashboard: Opportunities Exist to Improve Transparency and Oversight of Investment Risk at Select Agencies*, GAO-13-98 (Washington, D.C.: Oct. 16, 2012); *Data Center Consolidation: Agencies Making Progress on Efforts, but Inventories and Plans Need to Be Completed*, GAO-12-742 (Washington, D.C.: July 19, 2012);*Information Technology: Continued Attention Needed to Accurately Report Federal Spending and Improve Management*, GAO-11-831T (Washington, D.C.: July 14, 2011); and *Information Technology: Investment Oversight and Management Have Improved but Continued Attention Is Needed*, GAO-11-454T (Washington, D.C.: Mar. 17, 2011).

As part of its response to our prior work, OMB deployed a public website in 2009, known as the IT Dashboard, which provides detailed information on federal agencies' major IT investments,[3] including assessments of actual performance against cost and schedule targets (referred to as ratings) for approximately 700 major federal IT investments. In addition, OMB has initiated other significant efforts following the creation of the Dashboard. For example, OMB began leading reviews—known as TechStat Accountability Sessions (TechStats)—of selected IT investments to increase accountability and improve performance; launched an initiative to reduce the number of federal data centers (the Federal Data Center Consolidation Initiative (FDCCI)); and initiated PortfolioStat, which requires agencies to conduct annual reviews of their IT investments and make decisions on eliminating duplication.

You asked us to testify on the results and recommendations from our selected reports that focused on key aspects of the federal government's management of IT investments. Accordingly, my testimony specifically discusses our past work on OMB's IT Dashboard, TechStat reviews, IT acquisition best practices, FDCCI, and PortfolioStat, as well as failed and challenged IT projects.[4] My testimony also discusses ongoing follow-up work on our prior recommendations from these reports. All work on which this testimony is based was performed in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a

[3]According to OMB guidance, a major IT investment is a system or an acquisition requiring special management attention because it: has significant importance to the mission or function of the agency, a component of the agency, or another organization; is for financial management and obligates more than $500,000 annually; has significant program or policy implications; has high executive visibility; has high development, operating, or maintenance costs; is funded through other than direct appropriations; or is defined as major by the agency's capital planning and investment control process.

[4]See, for example, GAO-13-524; GAO-13-378; GAO-13-98; GAO-12-742; GAO, *Information Technology: Critical Factors Underlying Successful Major Acquisitions*, GAO-12-7 (Washington, D.C.: Oct. 21, 2011); *DOD Financial Management: Implementation Weaknesses in Army and Air Force Business Systems Could Jeopardize DOD's Auditability Goals*, GAO-12-134 (Washington, D.C.: Feb. 28, 2012); *Secure Border Initiative: DHS Needs to Strengthen Management and Oversight of Its Prime Contractor*, GAO-11-6 (Washington, D.C.: Oct. 18, 2010); and *Polar-Orbiting Environmental Satellites: With Costs Increasing and Data Continuity at Risk, Improvements Needed in Tri-agency Decision Making*, GAO-09-564 (Washington, D.C.: June 17, 2009).

reasonable basis for our findings and conclusions based on our audit objectives.

Background

Information technology should enable government to better serve the American people. However, according to OMB, despite spending more than $600 billion on IT over the past decade, the federal government has achieved little of the productivity improvements that private industry has realized from IT.[5] Too often, federal IT projects run over budget, behind schedule, or fail to deliver promised functionality. In combating this problem, proper oversight is critical.

Both OMB and federal agencies have key roles and responsibilities for overseeing IT investment management. OMB is responsible for working with agencies to ensure investments are appropriately planned and justified. Additionally, each year, OMB and federal agencies work together to determine how much the government plans to spend on IT projects and how these funds are to be allocated.

Agencies Have Spent Billions on Failed and Poorly Performing Investments

To assist agencies in managing their IT investments, Congress enacted the Clinger-Cohen Act of 1996, which requires OMB to establish processes to analyze, track, and evaluate the risks and results of major capital investments in information systems made by federal agencies and report to Congress on the net program performance benefits achieved as a result of these investments.[6] Further, the act places responsibility for managing investments with the heads of agencies and establishes chief information officers (CIO) to advise and assist agency heads in carrying out this responsibility.

Many of these investments are critical to our nation. For example, they include systems to secure our nation, control aircraft, and process tax returns. However, the federal government has spent billions of dollars on failed and poorly performing IT investments, as the following examples illustrate:

[5]OMB, *25 Point Implementation Plan to Reform Federal Information Technology Management* (Washington, D.C.: December 2010).

[6]40 U.S.C. § 11302(c).

- In December 2012, the Department of Defense (DOD) canceled the Air Force's Expeditionary Combat Support System after having spent more than a billion dollars and missing multiple milestones, including failure to achieve deployment within 5 years of obligating funds. The system was to provide the Air Force with a single, integrated logistics system that was to control and account for about $36 billion of inventory. We issued several reports on this system and found that, among other things, the program was not fully following best practices for developing reliable schedules and cost estimates.[7] Among other things, we had recommended that DOD ensure that any future system deficiencies identified through independent assessments are resolved or mitigated prior to further deployment of the system.

- In January 2011, the Department of Homeland Security ended the Secure Border Initiative Network (SBI*net*) program after obligating more than $1 billion to the program because it did not meet cost-effectiveness and viability standards. Since 2007, we had identified a range of issues and made several recommendations to improve this program.[8] For example, in May 2010 we reported that the final acceptance of the first two deployments had slipped from November 2009 to September 2010 and from March 2010 to November 2010, and that the cost-effectiveness of the system had not been justified.[9] As a result, we recommended that the department (1) limit near-term investment in the first incremental block of the program, (2) economically justify any longer-term investment in it, and (3) improve key program management disciplines. This work contributed to the department's decision to cancel the program.

[7]GAO-12-134 and *DOD Business Transformation: Improved Management Oversight of Business System Modernization Efforts Needed,* GAO-11-53 (Washington, D.C.: Oct. 7, 2010).

[8]See, for example, GAO-11-6; GAO, *Secure Border Initiative: DHS Needs to Reconsider Its Proposed Investment in Key Technology Program*, GAO-10-340 (Washington, D.C.: May 5, 2010); *Secure Border Initiative: DHS Needs to Address Testing and Performance Limitations That Place Key Technology Program at Risk*, GAO-10-158 (Washington, D.C.: Jan. 29, 2010); *Secure Border Initiative: DHS Needs to Address Significant Risks in Delivering Key Technology Investment*, GAO-08-1086 (Washington, D.C.: Sept. 22, 2008); and *Secure Border Initiative: SBInet Expenditure Plan Needs to Better Support Oversight and Accountability*, GAO-07-309 (Washington, D.C.: Feb. 15, 2007).

[9]GAO-10-340.

- In February 2010, a task force led by the President's Office of Science and Technology Policy decided to disband the National Polar-orbiting Operational Environmental Satellite System (NPOESS), a weather satellite program managed by three different agencies, after having spent 16 years and almost $5 billion on the program. We issued a series of reports on the NPOESS program that highlighted the technical challenges, cost growth, and tri-agency management challenges facing the program.[10] For example, in June 2009 we reported that the program's approved cost and schedule baselines were not achievable, and that costs could grow by approximately $1 billion over the then-current $13.95 billion estimate.[11] We further noted that schedules for the launch of a demonstration satellite and the first two operational satellites were expected to be delayed, increasing the risk of a gap in satellite continuity. However, after the program's cancellation, the agencies were directed to undertake separate acquisitions.

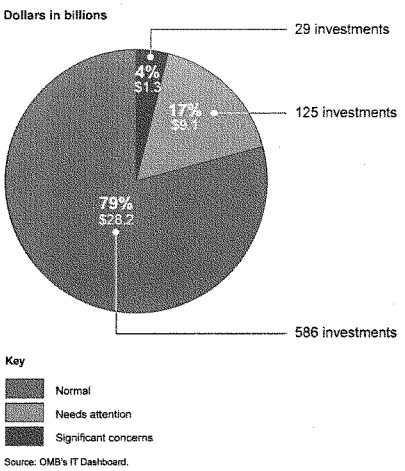
Appendix I provides further details on federal IT projects that have failed or faced significant challenges.

In addition to these projects, the IT Dashboard identifies other at-risk investments. Specifically, as of July 2013, according to the IT Dashboard, 154 of the federal government's approximately 700 major IT investments—totaling about $10.4 billion—were in need of management attention (rated to indicate the need for attention or to indicate significant concerns). (See fig. 1.)

[10]See, for example, GAO-09-564; GAO, *Environmental Satellites: Polar-orbiting Satellite Acquisition Faces Delays; Decisions Needed on Whether and How to Ensure Climate Data Continuity*, GAO-08-518 (Washington, D.C.: May 16, 2008); *Polar-orbiting Operational Environmental Satellites: Restructuring Is Under Way, but Technical Challenges and Risks Remain*, GAO-07-498 (Washington, D.C.: Apr. 27, 2007); and *Polar-orbiting Environmental Satellites: Information on Program Cost and Schedule Changes*, GAO-04-1054 (Washington, D.C.: Sept. 30, 2004).

[11]GAO-09-564.

Figure 1: Overall Performance Ratings of Major Investments on the IT Dashboard, as of July 2013



Source: OMB's IT Dashboard.

Federal IT Spending Is Burdened with Inefficient Operations and Duplication

In addition to poorly performing investments, federal IT spending is hampered by inefficient operations and duplication, as the following examples illustrate:

- *Federal data centers.* In March 2011, we reported that the increasing demand for IT had led to a dramatic rise in the number of federal data centers, with many housing similar types of equipment and providing similar processing and storage capabilities.[12] As federal agencies have modernized their operations, put more of their services online, and increased their information security profiles, they have demanded

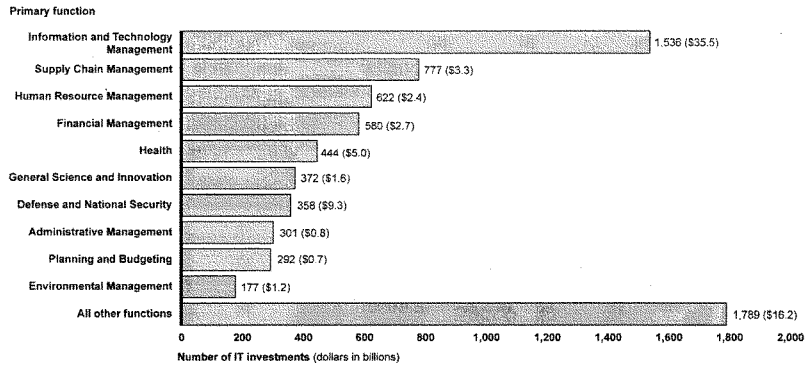
[12]GAO, *Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue*, GAO-11-318SP (Washington, D.C.: Mar. 1, 2011).

more computing power and data storage resources. According to OMB, the number of federal data centers grew from 432 in 1998 to more than 2,000 in 2010. The growth in the number of federal data centers, many offering similar services and resources, has resulted in overlap and duplication among the centers. In addition, according to OMB, in August 2009 the average utilization rate for servers ranged from 5 percent to 15 percent. In contrast, OMB's 2012 Data Center Consolidation Plan guidance states that the target for server utilization is 60 to 70 percent.

- *Duplicative IT investments.* In September 2011, we reported that limitations in OMB's guidance hindered efforts to identify IT duplication.[13] Specifically, although OMB's guidance to federal agencies on how to categorize IT investments allowed for analysis of investments with similar functions, it did not go far enough to allow identification of potentially duplicative investments. Specifically, since the fiscal year 2004 budget cycle, OMB had required agencies to categorize their IT investments according to primary function and subfunction. In their fiscal year 2011 submissions, agencies reported the greatest number of IT investments in Information and Technology Management (1,536 investments), followed by Supply Chain Management (777 investments), and Human Resource Management (622 investments). Similarly, planned expenditures on investments were greatest in Information and Technology Management, at about $35.5 billion. Figure 2 depicts, by primary function, the total number of investments within the 26 federal agencies that report to the IT Dashboard, as of July 2011.

[13]GAO, *Information Technology: OMB Needs to Improve Its Guidance on IT Investments*, GAO-11-826 (Washington, D.C.: Sept. 29, 2011).

Figure 2: Number of Government IT Investments by Primary Function, as of July 2011



Source: GAO analysis of exhibit 53 data.

However, we noted that categorizing IT investments according to primary function and subfunction limited OMB's ability to identify potentially duplicative investments both within and across agencies because similar investments may be organized under different functions. Accordingly, we recommended that OMB revise guidance to federal agencies on categorizing IT investments to ensure that the categorizations are clear and that it allows agencies to choose secondary categories, where applicable. OMB generally agreed with this recommendation and has since taken action to implement it. Specifically, OMB updated its policy to enable agencies to select one primary category and up to four secondary categories for each IT investment.

We also reported that results of OMB initiatives to identify potentially duplicative investments were mixed and that several federal agencies did not routinely assess their entire IT portfolios to identify and remove or consolidate duplicative systems. Specifically, we said that most of OMB's recent initiatives had not yet demonstrated results, and several agencies did not routinely assess legacy systems to determine if they are duplicative. As a result, we recommended that OMB require federal agencies to report the steps they take to ensure that their IT investments are not duplicative as part of their annual budget and IT

investment submissions. OMB generally agreed with this recommendation and has since taken action to implement it. Specifically, in March 2012, OMB issued a memorandum to federal agencies regarding implementing PortfolioStat reviews. As previously mentioned, these reviews are intended to assist in ending the investment in duplicative IT investments. In addition, as part of this effort, OMB is requiring agencies to document their cost savings and cost avoidance due to consolidation beginning in their fiscal year 2014 budget submissions.

OMB Has Launched Major Initiatives for Overseeing IT Investments

OMB has implemented a series of initiatives to improve the oversight of underperforming investments, more effectively manage IT, and address duplicative investments. These efforts include the following:

- *IT Dashboard.* Given the importance of transparency, oversight, and management of the government's IT investments, in June 2009 OMB established a public website, referred to as the IT Dashboard, that provides detailed information on approximately 700 major IT investments at 27 federal agencies, including ratings of their performance against cost and schedule targets. The public dissemination of this information is intended to allow OMB; other oversight bodies, including Congress; and the general public to hold agencies accountable for results and performance.

- *TechStat reviews.* In January 2010, the Federal CIO began leading TechStats sessions—face-to-face meetings to terminate or turnaround IT investments that are failing or are not producing results. These meetings involve OMB and agency leadership and are intended to increase accountability and transparency and improve performance. Subsequently, OMB empowered agency CIOs to hold their own TechStat sessions within their respective agencies. According to the former Federal CIO, the efforts of OMB and federal agencies to improve management and oversight of IT investments have resulted in almost $4 billion in savings.

- *FDCCI.* Concerned about the growing number of federal data centers, in February 2010 the Federal CIO established FDCCI. This initiative's

four high-level goals are to promote the use of "green IT"[14] by reducing the overall energy and real estate footprint of government data centers; reduce the cost of data center hardware, software, and operations; increase the overall IT security posture of the government; and shift IT investments to more efficient computing platforms and technologies. OMB believes that this initiative has the potential to provide about $3 billion in savings by the end of 2015.

- *PortfolioStat.* In order to eliminate duplication, move to shared services, and improve portfolio management processes, in March 2012 OMB launched the PortfolioStat initiative. Specifically, PortfolioStat requires agencies to conduct an annual agency-wide IT portfolio review to, among other things, reduce commodity IT[15] spending and demonstrate how their IT investments align with the agency's mission and business functions.[16] PortfolioStat is designed to assist agencies in assessing the current maturity of their IT investment management process, making decisions on eliminating duplicative investments, and moving to shared solutions in order to maximize the return on IT investments across the portfolio. OMB believes that the PortfolioStat effort has the potential to save the government $2.5 billion over the next 3 years by, for example, consolidating duplicative systems.

[14]"Green IT" refers to environmentally sound computing practices that can include a variety of efforts, such as using energy efficient data centers, purchasing computers that meet certain environmental standards, and recycling obsolete electronics.

[15]According to OMB, commodity IT includes services such as IT infrastructure (data centers, networks, desktop computers and mobile devices); enterprise IT systems (e-mail, collaboration tools, identity and access management, security, and web infrastructure); and business systems (finance, human resources, and other administrative functions).

[16]OMB, *Implementing PortfolioStat*, Memorandum, M-12-10 (Washington D.C.: Mar. 30, 2012).

OMB and Agencies Have Taken Steps to Improve the Acquisition and Management of IT Investments, but Additional Actions Are Needed

Over the past several years, we have highlighted OMB and agency efforts to improve the transparency into and oversight of underperforming federal IT investments, more effectively manage IT, and address duplicative investments. Notably, we issued a series of reports on: the IT Dashboard; OMB and agency efforts to address troubled projects through TechStat reviews; critical factors underlying successful acquisitions; and OMB and agency efforts to improve the management of IT through federal data center consolidation efforts, as well as address duplication through PortfolioStat.

OMB Launched the IT Dashboard to Increase Oversight and Transparency, but Improvements Needed

OMB has taken significant steps to enhance the oversight, transparency, and accountability of federal IT investments by creating its IT Dashboard, and by improving the accuracy of investment ratings. However, we found weaknesses with the accuracy and reliability of cost and schedule data, and we recommended steps that OMB should take to improve these data.

- Our July 2010 report[17] found that the cost and schedule ratings on OMB's Dashboard were not always accurate for the investments we reviewed, because these ratings did not take into consideration current performance. As a result, the ratings were based on outdated information. We recommended that OMB report on its planned changes to the Dashboard to improve the accuracy of performance information and provide guidance to agencies to standardize milestone reporting. OMB agreed with our recommendations and, as a result, updated the Dashboard's cost and schedule calculations to include both ongoing and completed activities. Similarly, in March 2011, OMB had initiated several efforts to increase the Dashboard's value as an oversight tool, and had used its data to improve federal IT management.[18] However, agency practices and the Dashboard's calculations contributed to inaccuracies in the reported investment performance data. These included, for instance, missing data submissions or erroneous data at each of the five agencies we

[17]GAO, *Information Technology: OMB's Dashboard Has Increased Transparency and Oversight, but Improvements Needed*, GAO-10-701 (Washington, D.C.: July 16, 2010).

[18]GAO, *Information Technology: OMB Has Made Improvements to Its Dashboard, but Further Work Is Needed by Agencies and OMB to Ensure Data Accuracy*, GAO-11-262 (Washington, D.C.: Mar. 15, 2011).

reviewed, along with instances of inconsistent program baselines and unreliable source data. As a result, we recommended that the agencies take steps to improve the accuracy and reliability of their Dashboard information, and that OMB improve how it rates investments relative to current performance and schedule variance. Most agencies generally concurred with our recommendations; OMB agreed with our recommendation for improving ratings for schedule variance. It disagreed with our recommendation to improve how it reflects current performance in cost and schedule ratings, but more recently made changes to Dashboard calculations to address this while also noting challenges in comprehensively evaluating cost and schedule data for these investments.

- Our subsequent report in 2011[19] noted that that the accuracy of investment cost and schedule ratings had improved since our July 2010 report because OMB had refined the Dashboard's cost and schedule calculations. Most of the ratings for the eight investments we reviewed were accurate, although more could be done to inform oversight and decision making by emphasizing recent performance in the ratings. We recommended that the General Services Administration comply with OMB's guidance for updating its ratings when new information becomes available (including when investments are rebaselined) and the agency concurred. Since we previously recommended that OMB improve how it rates investments, we did not make any further recommendations.

- More recently, in October 2012 we found that opportunities existed to improve transparency and oversight of investment risk at our selected agencies.[20] Specifically, CIOs at six federal agencies consistently rated the majority of their IT investments as low risk. These agencies rated no more than 12 percent of their investments as high or moderately high risk, and two agencies (DOD and the National Science Foundation) rated no investments at these risk levels. Over time, about 47 percent of the agencies' Dashboard investments received the same rating in every rating period. For ratings that changed, the Department of Homeland Security and Office of Personnel Management reported more investments with reduced risk

[19]GAO, *IT Dashboard: Accuracy Has Improved, and Additional Efforts Are Under Way to Better Inform Decision Making,* GAO-12-210 (Washington, D.C.: Nov. 7, 2011).

[20]GAO-13-98.

when initial ratings were compared with those in March 2012; the other four agencies reported more investments with increased risk. In the past, OMB reported trends for risky IT investments needing management attention as part of the President's annual budget submission, but discontinued this reporting in fiscal year 2010. Accordingly, we recommended OMB analyze agencies' investment risk over time as reflected in the Dashboard's CIO ratings and present its analysis with the President's annual budget submission, with which OMB concurred.

Further, agencies generally followed OMB's instructions for assigning CIO ratings, which included considering stakeholder input, updating ratings when new data become available, and applying OMB's six evaluation factors. DOD's ratings were unique in reflecting additional considerations, such as the likelihood of OMB review, and consequently DOD did not rate any of its investments as high risk. However, in selected cases, these ratings did not appropriately reflect significant cost, schedule, and performance issues reported by GAO and others. Although three DOD investments experienced significant performance problems and were part of a GAO high-risk area (business systems modernization), they were all rated low risk or moderately low risk by the DOD CIO. For example, in early 2012, we reported that Air Force's Defense Enterprise Accounting and Management System faced a 2-year deployment delay and an estimated cost increase of about $500 million from an original life-cycle cost estimate of $1.1 billion (an increase of approximately 45 percent), and that assessments by DOD users had identified operational problems with the system, such as data accuracy issues, an inability to generate auditable financial reports, and the need for manual workarounds.[21] In July 2012, the DOD Inspector General reported that the system's schedule delays were likely to diminish the cost savings it was to provide, and would jeopardize the department's goals for attaining an auditable financial statement. DOD's CIO rated the Defense Enterprise Accounting and Management System low risk or moderately low risk from July 2009 through March 2012.

Moreover, DOD did not apply its own risk management guidance to the ratings, which reduces their value for investment management

[21]GAO, *DOD Financial Management: Reported Status of Department of Defense's Enterprise Resource Planning Systems*, GAO-12-565R (Washington, D.C.: Mar. 30, 2012) and GAO-12-134.

and oversight. Therefore, we recommended that DOD ensure that its CIO ratings reflect available investment performance assessments and its risk management guidance. DOD concurred with our recommendation.

Additional TechStat Reviews Needed to Address Troubled Projects

Regarding TechStat reviews, we reported that OMB and selected agencies had held multiple TechStats, but additional OMB oversight was needed to ensure that these meetings were having the appropriate impact on underperforming projects and that resulting cost savings were valid.[22] Specifically, we reported that as of April 2013, OMB reported conducting 79 TechStats, which focused on 55 investments at 23 federal agencies. Further, 4 selected agencies—the Departments of Agriculture, Commerce, Health and Human Services, and Homeland Security—conducted 37 TechStats covering 28 investments. About 70 percent of the OMB-led and 76 percent of agency-led TechStats on major investments were considered medium to high risk at the time of the TechStat. However, the number of at-risk TechStats held to date was relatively small compared to the current number of medium- and high-risk IT investments. Specifically, the OMB-led TechStats represented roughly 18.5 percent of the investments across the government that had a medium- or high-risk CIO rating. For the 4 selected agencies, the number of TechStats represented about 33 percent of the investments that have a medium- or high-risk CIO rating. We concluded that until OMB and agencies develop plans to address these weaknesses, the investments would likely remain at risk.

In addition, we reported that OMB and selected agencies had tracked and reported positive results from TechStats, with most resulting in improved governance. Agencies also reported projects with accelerated delivery, reduced scope, or termination. We also found that OMB reported in 2011 that federal agencies achieved almost $4 billion in life-cycle cost savings as a result of TechStat sessions. However, we were unable to validate OMB's reported results because OMB did not provide artifacts showing that it ensured the results were valid. From our selected agencies, three investments had cost implications. Agencies provided supporting documentation for about $22.2 million in cost savings and avoidances. We concluded that until OMB obtains and shares information on the

[22]GAO-13-524.

methods used to validate reported results, it would be difficult for the results to be independently validated and for OMB to provide assurance to Congress and the public that TechStats were achieving their intended impact. We therefore recommended that OMB validate the resulting cost savings from TechStats that it reports to Congress and require agencies to conduct TechStats for each IT investment rated with a moderately high- or high-risk CIO rating on the IT Dashboard. We also made recommendations to the selected agencies to strengthen their TechStat processes. OMB and the Department of Commerce officials generally agreed with our recommendations. The Department of Agriculture partially agreed with our assessment; neither it nor the Department of Health and Human Services commented on the recommendations.

Critical Factors Underlying Successful Major Acquisitions

Subsequent to the launch of the Dashboard and the TechStat reviews, and to help the federal agencies address the well-documented acquisition challenges they face, we identified seven successful investment acquisitions and nine common factors critical to their success in 2011.[23] Specifically, we reported that department officials identified seven successful investment acquisitions, in that they best achieved their respective cost, schedule, scope, and performance goals.[24] In addition, common factors critical to the success of three or more of the seven investments were: (1) program officials were actively engaged with stakeholders; (2) program staff had the necessary knowledge and skills; (3) senior department and agency executives supported the programs; (4) end users and stakeholders were involved in the development of requirements; (5) end users participated in testing of system functionality prior to formal end user acceptance testing; (6) government and contractor staff were stable and consistent; (7) program staff prioritized requirements; (8) program officials maintained regular communication with the prime contractor; and (9) programs received sufficient funding. Further, officials from all seven investments cited active engagement with

[23]GAO-12-7.

[24]The seven investments were (1) Commerce's Decennial Response Integration System, (2) DOD's Defense Global Combat Support System-Joint (Increment 7), (3) Department of Energy's Manufacturing Operations Management Project, (4) DHS's Western Hemisphere Travel Initiative, (5) Department of Transportation's Integrated Terminal Weather System, (6) Internal Revenue Service's Customer Account Data Engine 2, and (7) Veterans Affairs Occupational Health Record-keeping System.

program stakeholders as a critical factor to the success of those investments. These critical factors support OMB's objective of improving the management of large-scale IT acquisitions across the federal government, and wide dissemination of these factors could complement OMB's efforts.

Strengthened Oversight Needed to Consolidate Federal Data Centers and Achieve Cost Savings

In an effort to consolidate the growing number of federal data centers, in 2010, OMB launched the FDCCI. As part of this initiative, agencies developed plans to consolidate data centers; however, these plans were incomplete and did not include best practices. In addition, although agencies had made progress on their data center closures, OMB had not determined initiative-wide cost savings, and oversight of the initiative was not being performed in all key areas. Finally, as part of ongoing follow-up work, we determined that agencies closed additional data centers, but that the number of federal data centers was significantly higher than previously estimated by OMB.

- In July 2011, we issued a report on the status of FDCCI and found that only 1 of the 24 agencies had submitted a complete inventory and no agency had submitted complete plans.[25] Further, OMB had not required agencies to document the steps they had taken, if any, to verify the inventory data. We concluded that until these inventories and plans were complete, agencies would not be able to implement their consolidation activities and realize expected cost savings. Moreover, without an understanding of the validity of agencies' consolidation data, OMB could not be assured that agencies were providing a sound baseline for estimating consolidation savings and measuring progress against those goals. Accordingly, we made several recommendations to OMB, including that the Federal CIO require that agencies, when updating their data center inventory, state what actions were taken to verify the information in the inventory and to identify any associated limitations on the data, and to complete the missing elements in their inventories and consolidation plans. OMB generally agreed with our report and has since taken actions to address our recommendations. For example, in July 2011, OMB

[25]GAO, *Data Center Consolidation: Agencies Need to Complete Inventories and Plans to Achieve Expected Savings*, GAO-11-565 (Washington, D.C.: July 19, 2011).

required agency CIOs to submit a letter that identified steps taken to verify their data center inventory information and attest to the completeness of their consolidation plan. In addition, in March 2012, OMB required that all agencies, by the end of the fourth quarter of every fiscal year, complete all elements missing from their consolidation plans.

- Additionally, in July 2012, we updated our review of FDCCI's status and found that, while agencies' 2011 inventories and plans had improved as compared to their 2010 submissions, only 3 agencies had submitted a complete inventory and only 1 agency had submitted a complete consolidation plan.[26] In addition, we noted that 3 agencies had submitted their inventory using an outdated format, in part, because OMB had not publicly posted its revised guidance. Notwithstanding these weaknesses, we found that 19 agencies reported anticipating about $2.4 billion in cost savings between 2011 and 2015.

  We also reported that none of five selected agencies had a master program schedule or cost-benefit analysis that was fully consistent with best practices. To assist agencies with their data center consolidation efforts, OMB had sponsored the development of a FDCCI total cost of ownership[27] model that was intended to help agencies refine their estimated costs for consolidation; however, agencies were not required to use the cost model as part of their cost estimating efforts. Accordingly, we reiterated our prior recommendation that agencies complete missing plan and inventory elements and made new recommendations to OMB to publically post guidance updates on the FDCCI website and to require agencies to use its cost model. OMB generally agreed with our recommendations and has since taken steps to address them. More specifically, OMB posted its 2012 guidance for updating data center inventories and plans, as well as guidance for reporting consolidation progress, to the FDCCI public website. Further, the website has been updated to provide prior guidance documents and OMB memoranda. In addition, OMB's 2012 consolidation plan guidance required agencies to use the cost model as they developed their 2014 budget request.

[26]GAO-12-742.

[27]OMB refers to total cost of ownership as all associated data-center-related activities and costs without regard to ownership, project association, or funding line.

- More recently, we reported[28] and testified[29] that the 24 FDCCI agencies made progress towards OMB's goal to close 40 percent, or 1,253 of the 3,133 total federal data centers, by the end of 2015, but OMB had not measured agencies' progress against its other goal of $3 billion in cost savings by the end of 2015. Agencies closed 420 data centers by the end of December 2012 and had plans to close an additional 548 to reach 968 by December 2015—285 closures short of OMB's goal. OMB had not determined agencies' progress against its cost savings goal because, according to OMB staff, the agency has not determined a consistent and repeatable method for tracking cost savings. We reported that this lack of information makes it uncertain whether the $3 billion in savings is achievable by the end of 2015. We concluded that until OMB tracks and reports on performance measures such as cost savings, it will be limited in its ability to oversee agencies' progress against key goals.

  Further, we reported that, pursuant to OMB direction, three organizations—the Data Center Consolidation Task Force,[30] the General Services Administration Program Management Office, and OMB—are responsible for federal data center consolidation oversight activities. We found that while most activities were being performed, there were still several weaknesses in oversight. For example, while the General Services Administration's Program Management Office had collected agencies' quarterly data center closure updates and made the information publically available on an electronic dashboard for tracking consolidation progress, it had not fully performed other oversight activities, such as conducting analyses of agencies' inventories and plans. In addition, while OMB had implemented several initiatives to track agencies' consolidation progress, such as establishing requirements for agencies to update their plans and inventories yearly and to report quarterly on their consolidation progress, the agency had not approved the plans on the basis of their completeness or reported on progress against its goal of $3 billion in

[28]GAO-13-378.

[29]GAO-13-627T.

[30]The Data Center Consolidation Task Force is comprised of the data center consolidation program managers from each agency. According to its charter, the Task Force is critical to supporting collaboration across the FDCCI agencies, including identifying and disseminating key pieces of information, solutions, and processes that will help agencies in their consolidation efforts.

cost savings. The weaknesses in oversight of the data center consolidation initiative were due, in part, to OMB not ensuring that assigned responsibilities are being executed. We concluded that improved oversight could better position OMB to assess progress against its cost savings goal and minimize agencies' risk of not realizing expected cost savings.

We therefore recommended that OMB's Federal CIO track and report on key performance measures, extend the time frame for achieving planned cost savings, and improve the execution of important oversight responsibilities. OMB agreed with two of our recommendations and stated that it plans to evaluate the remaining recommendation related to extending the time frame.

- Finally, as part of ongoing follow-up work, we reported that agencies had closed an additional 64 data centers compared to the total number of reported closures through the end of December 2012. More specifically, as of May 2013, agencies had reported closing 484 data centers by the end of April 2013, and were planning to close an additional 571 data centers—for a total of 1,055—by September 2014. However, we also found that the number of federal data centers had grown significantly since OMB had reported in December 2011 that there were approximately 3,133 data centers. Specifically, as of July 2013, 22 of the 24 FDCCI agencies had collectively reported 6,836 data centers in their inventories,[31] which is approximately 3,700 data centers more than OMB's previous estimate from December 2011.[32]

OMB Launched PortfolioStat to Address Duplicative Investments

To address duplicative IT investments, OMB launched PortfolioStat in March 2012, which is designed to assist agencies in assessing the current maturity of their IT portfolio management process, making decisions on eliminating duplication, and moving to shared services in order to maximize the return on IT investments across the portfolio.

[31]Two agencies had not yet provided updated inventories—the Social Security Administration and the Department of Veterans Affairs.

[32]Department of Agriculture officials stated that, in December 2012, the department added approximately 2,200 data centers to its inventory to account for its county office locations that each have one IT server.

We recently reported[33] and testified[34] on OMB's PortfolioStat initiative, including that, in March 2013, OMB issued a memorandum documenting additional guidance to help strengthen the initiative. In its memorandum, OMB noted that the results from PortfolioStat so far had been significant—including that agencies had identified and committed to nearly 100 opportunities to consolidate or eliminate commodity IT investments and also described plans to strengthen the initiative by integrating PortfolioStat and FDCCI, streamlining agency reporting requirements, and establishing guidance for conducting PortfolioStat sessions in fiscal year 2013. [35] For example, to improve the outcomes of PortfolioStat and to advance agency IT portfolio management, OMB's memorandum consolidated previously collected IT plans, reports, and data calls into three primary collection channels—an information resources management strategic plan,[36] an enterprise road map,[37] and an integrated data collection channel.[38] Agencies' draft versions of their strategic plans and enterprise road maps were due to OMB in May 2013, as well as their first integrated data collections. The integrated data collections are to be updated quarterly beginning in August 2013 and the strategic plans and road maps are to be updated after Congress receives the President's budget for fiscal year 2015.

[33]GAO-13-378.

[34]GAO, *Information Technology: OMB and Agencies Need to Focus Continued Attention on Eliminating Duplicative Investments*, GAO-13-685T (Washington, D.C.: June 11, 2013) and GAO-13-627T.

[35]OMB, *Fiscal Year 2013 PortfolioStat Guidance: Strengthening Federal IT Portfolio Management*, Memorandum M-13-09 (Washington, D.C.: Mar. 27, 2013).

[36]OMB, *Management of Federal Information Resources*, Circular A-130 (Washington, D.C.: Nov. 30, 2000). According to OMB Circular A-130, an agency's information resources management strategic plan should describe how information resources management activities help accomplish agency missions, and ensure that information resource management decisions are integrated with organizational planning, budget, procurement, financial management, human resources management, and program decisions.

[37]OMB, *Increasing Shared Approaches to Information Technology Services* (Washington, D.C.: May 2, 2012). The enterprise road map is to include a business and technology architecture, an IT asset inventory, a commodity IT consolidation plan, a line of business service plan, and an IT shared service plan.

[38]The integrated data collection channel will be used by agencies to report structured information, such as progress in meeting IT strategic goals, objectives, and metrics, as well as cost savings and avoidances resulting from IT management actions.

However, our April 2013 report noted that key data-center-related performance metrics of the combined initiative were not yet fully defined. For example, OMB's March 2013 memorandum[39] stated that, to more effectively measure the efficiency of an agency's data center assets, agencies would also be measured by the extent to which their data centers are optimized for total cost of ownership by incorporating metrics for data center energy, facility, labor, and storage, among other things. Although OMB had indicated which performance measures it planned to use going forward, it had not documented the specific metrics for agencies to report against. OMB's March 2013 memorandum indicates that these would be developed by the Data Center Consolidation Task Force, but did not provide a time frame for when this will be completed.

Further, our report noted that OMB's integration of FDCCI with PortfolioStat also included a modification to the previous data center consolidation goal of closing approximately 40 percent of the total number of agency data centers. Specifically, OMB stated an agency's data center population will now be placed into one of two categories—core and non-core data centers—but for which the memorandum did not provide specific definitions. OMB further stated that its new goal is to close 40 percent of non-core data centers but, as noted, the definitions of core and non-core data centers were not provided. Therefore, the total number of data centers to be closed under OMB's revised goal could not be determined.

We also reported that, although OMB had previously stated that PortfolioStat was expected to result in savings of approximately $2.5 billion through 2015, its March 2013 memorandum did not establish a new cost savings goal that reflected the integration of FDCCI. Instead, OMB stated that all cost savings goals previously associated with FDCCI would be integrated into broader agency efforts to reshape their IT portfolios, but did not provide a revised savings estimate. We concluded that the lack of a new cost savings goal would limit OMB's ability to determine whether or not the new combined initiative is on course toward achieving its planned objectives. As a result, we recommended that OMB track and annually report on key data center consolidation performance measures, such as the size of data centers being closed and cost savings to date. OMB agreed with our recommendation.

[39]OMB, Memorandum M-13-09.

We have ongoing work looking at OMB's PortfolioStat initiative, including determining whether agencies completed key required PortfolioStat actions, evaluating selected agencies' plans for making portfolio improvements and achieving associated cost savings, and describing OMB's plans to improve the PortfolioStat process.

In summary, OMB's and agencies' recent efforts have resulted in greater transparency and oversight of federal spending, but continued leadership and attention are necessary to build on the progress that has been made. For example, federal agencies need to continue to improve the accuracy of information on the Dashboard to provide greater transparency and even more attention to the billions of dollars invested in troubled projects. Further, additional TechStat reviews are needed to focus management attention on additional troubled projects and establish clear action items to turn the projects around or terminate them. In addition, the expanded use of the common factors critical to the successful management of large-scale IT acquisitions should result in the more effective delivery of mission-critical systems.

The federal government can also build on the momentum of progress on agencies' data center closures as the federal data center consolidation effort is integrated with PortfolioStat. OMB recently released additional guidance that expanded this important initiative's scope and reported that significant progress had been made to date, including more than 100 opportunities to consolidate or eliminate commodity IT investments. Moving forward, it will be important for OMB to be transparent on agencies' progress against key performance metrics, such as data center consolidation cost savings, in order to ensure that the PortfolioStat initiative is meeting its established objectives. Overall, the implementation of GAO recommendations can help further reduce wasteful spending on poorly managed, unnecessary, and duplicative investments.

Chairman Mica, Ranking Member Connolly, and Members of the Subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staffs have any questions about this testimony, please contact me at (202) 512-9286 or at pownerd@gao.gov. Individuals who made key contributions to this testimony are Dave Hinchman (Assistant Director), Justin Booth, Rebecca Eyler, Lee A. McCracken, Jonathan Ticehurst, and Kevin Walsh.

Appendix I: Examples of IT Project Failures and Challenges

The federal government continues to spend billions of dollars on troubled IT investments. This appendix identifies examples of major IT investments that have failed or faced significant challenges. In this regard, we focused on IT projects that were considered major development or acquisition efforts, based on their size or mission criticality. We considered a project to have failed if it was terminated by the agency after substantial investment and without delivering significant planned capabilities. A project was considered to be challenged if we had identified significant issues in its performance or management and made recommendations for improvement. To identify these projects, we reviewed our work published since January 1, 2003, that addressed the performance or management of federal agency IT projects. We did not include a project on our lists if it was not the subject of a GAO report.

Failed Investments

Since 2003, a number of major IT projects at federal agencies have failed. Specifically, agencies canceled the following investments after spending millions of dollars:

- Department of Defense's (DOD) Expeditionary Combat Support System (ECSS)
- DOD's Defense Integrated Military Human Resources System (DIMHRS)
- Department of Homeland Security's (DHS) Computer-Assisted Passenger Prescreening System (CAPPS II)
- DHS's Electronically Managing Enterprise Resources for Government Effectiveness and Efficiency (eMerge2)
- DHS's Next Generation Homeland Security Information Network (HSIN Next Gen)
- DHS's Secure Border Initiative Network (SBI*net*)
- Federal Bureau of Investigation's (FBI) Virtual Case File (VCF)
- General Services Administration's (GSA) e-Authentication Program
- National Archives and Records Administration's (NARA) Electronic Records Archive (ERA)
- National Polar-orbiting Operational Environmental Satellite System (NPOESS)
- Office of Personnel Management's (OPM) Retirement Systems Modernization
- Veterans Affairs' (VA) Scheduling Replacement Project
- VA's Core Financial and Logistics System (CoreFLS)
- VA's Financial and Logistics Integrated Technology Enterprise (FLITE) Program

- VA's Health Information Systems and Technology Architecture—Foundations Modernization (VistA-FM)

These projects were canceled after going over budget, missing schedule milestones, or failing to deliver intended capabilities. In many of these cases, we had identified issues in the management of these programs and made recommendations for improvement. These issues were often related to a lack of disciplined and effective management, such as project planning, requirements definition, and program oversight and governance. The following provides additional information on these failed IT investments.

DOD's Expeditionary Combat Support System (ECSS)

In December 2012, DOD canceled ECSS after having spent more than a billion dollars and missing multiple milestones, including failure to achieve deployment within 5 years of obligating funds. The system was to provide the Air Force with a single, integrated logistics system that was to control and account for about $36 billion of inventory. We issued several reports on this system and found that, among other things, the program was not fully following best practices for developing reliable schedules and cost estimates.[1] Among other things, we had recommended that DOD ensure that any future system deficiencies identified through independent assessments be resolved or mitigated prior to further deployment of ECSS.

DOD's Defense Integrated Military Human Resources System (DIMHRS)

In February 2010, DIMHRS was canceled after 10 years of development and approximately $850 million spent, due, in part, to a lack of strategic alignment, governance, and requirements management, as well as the overall size and scope of the effort.[2] The system was intended to provide

[1]GAO, *DOD Business Transformation: Improved Management Oversight of Business System Modernization Efforts Needed*, GAO-11-53 (Washington, D.C.: Oct. 7, 2010) and *DOD Financial Management: Implementation Weaknesses in Army and Air Force Business Systems Could Jeopardize DOD's Auditability Goals*, GAO-12-134 (Washington, D.C.: Feb. 28, 2012).

[2]GAO, *Information Technology: Departments of Defense and Energy Need to Address Potentially Duplicative Investments*, GAO-12-241 (Washington, D.C.: Feb. 17, 2012).

a joint, integrated, standardized personnel and pay system for all military personnel. In 2008, we had reported that Army officials had concerns about the extent to which Army requirements were being incorporated into DIMHRS and that DOD had not established a clear, well-defined process for maintaining effective communications to better prepare the Army to deploy DIMHRS.[3] We had recommended that DOD develop a clearly defined process for effectively communicating the differences between DIMHRS's capabilities and the Army's requirements. However, subsequent to the cancellation decision, each military service is now responsible for developing its own integrated personnel and pay system.

DHS's Computer-Assisted Passenger Prescreening System (CAPPS II)

In August 2004, DHS canceled its CAPPS II program—a Transportation Security Administration (TSA) initiative to develop a system to identify passengers requiring additional security attention—due to a variety of delays and challenges. In February 2004, we reported that, according to program officials, approximately $41.5 million had been allocated for the system's acquisition to date and that the program faced a number of implementation challenges.[4] Specifically, key activities in the development of CAPPS II had been delayed, and TSA had not completed important system planning activities. In addition, TSA had not completely addressed seven of the eight issues identified by Congress as key areas of interest related to the development, operation, and public acceptance of CAPPS II. We also identified other challenges, including developing the international cooperation needed to obtain passenger data, managing the possible expansion of the program's mission beyond its original purpose, and ensuring that identity theft could not be used to negate the security benefits of the system. We recommended, among other things, that DHS develop project plans, including schedules and estimated costs, to guide development; establish a plan for completing critical security activities; and develop a process by which passengers can get erroneous information corrected. CAPPS II was eventually replaced by the Secure

[3]GAO, *DOD Systems Modernization: Maintaining Effective Communication Is Needed to Help Ensure the Army's Successful Deployment of the Defense Integrated Military Human Resources System*, GAO-08-927R (Washington, D.C.: Sept. 8, 2008).

[4]GAO, *Aviation Security: Computer-Assisted Passenger Prescreening System Faces Significant Implementation Challenges*, GAO-04-385 (Washington, D.C.: Feb. 12, 2004).

Flight system, which in turn was completely revamped and replaced by a new version of Secure Flight that finally became operational.

DHS's Electronically Managing Enterprise Resources for Government Effectiveness and Efficiency (eMerge^2)

DHS canceled its eMerge^2 project in December 2005 after an unsuccessful pilot program that began in January 2004 and lasted about 2 years. The project was expected to integrate financial management systems across the entire department and address financial management weaknesses. According to DHS, it had spent a total of about $52 million for the eMerge^2 project, including approximately $18 million in contractor costs. As we reported in June 2007, DHS officials stated that several of the work products developed for eMerge^2 would be useful as they move forward with their financial management modernization efforts, regardless of the strategic financial management direction ultimately selected by the department.[5] However, we found that key work products were of limited value. Specifically, the concept of operations did not contain an adequate description of the legacy systems and a clear articulation of the vision that should guide the department's improvement efforts, and key requirements developed for the project were unclear and incomplete. We recommended, among other things, that, going forward, DHS employ best practices in defining its financial management system strategy, such as developing a comprehensive concept of operations document, standardizing business processes, and using disciplined processes to minimize project risk.

DHS's Next Generation Homeland Security Information Network (HSIN Next Gen)

In October 2010, DHS terminated the acquisition of its HSIN Next Gen system, which was to be the follow-on to its original HSIN system, the department's primary IT system for sharing terrorism-related information. The department cited, among other things, continuing cost, schedule, and performance shortfalls and the lack of key IT management controls and capabilities that are essential to mitigating such shortfalls and ensuring successful system delivery. In 2008 we reported that DHS had yet to

[5]GAO, *Homeland Security: Departmentwide Integrated Financial Management Systems Remain a Challenge*, GAO-07-536 (Washington, D.C.: June 21, 2007).

implement the full set of controls essential to effectively manage the acquisition of HSIN Next Gen.[6] We recommended that DHS strengthen its acquisition management controls before it started to implement the system. The termination of HSIN Next Gen resulted in a cost reduction of $128,969,000.

DHS's Secure Border Initiative Network (SBI*net*)

In January 2011, the Secretary of Homeland Security ended the SBI*net* program after obligating more than $1 billion to the program because it did not meet cost-effectiveness and viability standards. Since 2007, we had identified a range of issues and made several recommendations to improve this program.[7] For example, in May 2010 we reported that the final acceptance of the first two deployments had slipped from November 2009 to September 2010 and from March 2010 to November 2010, and that the cost-effectiveness of the system had not been justified.[8] We concluded that DHS had not demonstrated that the considerable time and money being invested to acquire and deploy the program was a wise and prudent use of limited resources. As a result, we recommended that the department (1) limit near-term investment in the first incremental block of the program, (2) economically justify any longer-term investment in it, and (3) improve key program management disciplines. This work contributed to the department's decision to cancel the program.

[6]GAO, *Information Technology: Management Improvements Needed on the Department of Homeland Security's Next Generation Information Sharing System*, GAO-09-40 (Washington, D.C.: Oct. 8, 2008).

[7]See, for example, GAO, *Secure Border Initiative: DHS Needs to Strengthen Management and Oversight of Its Prime Contractor*, GAO-11-6 (Washington, D.C.: Oct. 18, 2010); *Secure Border Initiative: DHS Needs to Reconsider Its Proposed Investment in Key Technology Program*, GAO-10-340 (Washington, D.C.: May 5, 2010); *Secure Border Initiative: DHS Needs to Address Testing and Performance Limitations That Place Key Technology Program at Risk*, GAO-10-158 (Washington, D.C.: Jan. 29, 2010); *Secure Border Initiative: DHS Needs to Address Significant Risks in Delivering Key Technology Investment*, GAO-08-1086 (Washington, D.C.: Sept. 22, 2008); and *Secure Border Initiative: SBInet Expenditure Plan Needs to Better Support Oversight and Accountability*, GAO-07-309 (Washington, D.C.: Feb. 15, 2007).

[8]GAO-10-340.

FBI's Virtual Case File (VCF)

In March 2005, the FBI discontinued the VCF component of its Trilogy project after investing 3 years and $170 million. The FBI terminated the project after Trilogy's overall projected costs grew from $380 million to $537 million, the program fell behind schedule, and pilot testing showed that completion of VCF was infeasible and cost prohibitive. Among reasons we and others cited for VCF's failure were poorly defined system requirements, ineffective requirements change control, limited contractor oversight, and human capital shortfalls due to, for example, a lack of continuity in certain management positions and a lack of trained staff for key program positions.[9]

GSA's e-Authentication Program

In October 2003, it was reported that GSA had terminated plans to develop an "e-Authentication gateway," which was to provide a consolidated electronic authentication service to support the e-government initiatives sponsored by OMB. We had reported 1 month earlier in September 2003 that, according to agency officials, 13 agencies had provided a total of $13.5 million to GSA for the gateway as of August 18, 2003, with another $3 million expected from another agency by the end of fiscal year 2003.[10] However, GSA had achieved few of its project objectives and extended the milestone for completing a fully operational system. We noted that the modest progress that had been achieved to date called into question the likelihood that the project could successfully field an operational gateway, even within the revised schedule. Further, the project faced a number of challenges, including developing procedures and guidance defining the specific technologies to support different authentication requirements, agreeing upon technical standards to provide a basis for ensuring interoperability, and taking full measures to

[9]GAO, *Information Technology: FBI Following a Number of Key Acquisition Practices on New Case Management System, but Improvements Still Needed*, GAO-07-912 (Washington, D.C.: July 30, 2007); *Information Technology: FBI Has Largely Staffed Key Modernization Program, but Strategic Approach to Managing Program's Human Capital Is Needed*, GAO-07-19 (Washington, D.C.: Oct. 16, 2006); and *Information Technology: FBI Is Building Management Capabilities Essential to Successful System Deployments, but Challenges Remain*, GAO-05-1014T (Washington, D.C.: Sept. 14, 2005).

[10]GAO, *Electronic Government: Planned e-Authentication Gateway Faces Formidable Development Challenges*, GAO-03-952 (Washington, D.C.: Sept. 12, 2003).

ensure that the gateway system was adequately secured and that privacy information adequately protected.

NARA's Electronic Records Archive (ERA)

In July 2010, OMB directed NARA to halt development of its ERA system at the end of fiscal year 2011 (a year earlier than planned). OMB cited concerns about the system's cost, schedule, and performance and directed NARA to better define system functionality and improve strategic planning. Through fiscal year 2010, NARA had spent about $375 million on the system. We issued several reports and made recommendations to improve this system, noting, among other things, that NARA's plans for ERA lacked sufficient detail to clearly show what functions had been delivered or were to be included in future increments and at what cost; the agency had been inconsistent in its use of earned value management to monitor the project's progress; and NARA lacked a contingency plan for ERA to ensure system continuity in the event that normal operations were disrupted.[11] These findings and recommendations contributed to the decision to halt the system.

National Polar-orbiting Operational Environmental Satellite System (NPOESS)

In February 2010, a presidential task force decided to disband NPOESS after having spent 16 years and almost $5 billion on the program. NPOESS was a tri-agency weather satellite program managed by the National Oceanic and Atmospheric Administration (NOAA), DOD, and the National Aeronautics and Space Administration (NASA). We issued a series of reports on the NPOESS program that highlighted the technical challenges, cost growth, and tri-agency management challenges facing

[11]See, for example, GAO, *Electronic Records Archive: Status Update on the National Archives and Records Administration's Fiscal Year 2010 Expenditure Plan*, GAO-10-657 (Washington, D.C.: June 11, 2010); *Electronic Records Archive: The National Archives and Records Administration's Fiscal Year 2009 Expenditure Plan*, GAO-09-733 (Washington, D.C.: July 24, 2009); and *National Archives: Progress and Risks in Implementing its Electronic Records Archive Initiative*, GAO-10-222T (Washington, D.C.: Nov. 5, 2009).

the program.[12] For example, in June 2009 we reported that the program's approved cost and schedule baselines were not achievable, and that costs could grow by approximately $1 billion over the then-current $13.95 billion estimate.[13] We further noted that schedules for the launch of a demonstration satellite and the first two operational satellites were expected to be delayed, increasing the risk of a gap in satellite continuity. We had also found that the NPOESS program's tri-agency executive council was ineffective, and we made recommendations aimed at improving this executive-level oversight. However, after the program's cancellation, the agencies were directed to undertake separate acquisitions.

OPM's Retirement Systems Modernization

In February 2011, OPM canceled its Retirement Systems Modernization program after several years of trying to improve the implementation of this investment.[14] This was the agency's third major effort over a more than 20-year period to automate the processing of federal employee retirement claims. According to OPM, it spent approximately $231 million on this investment. We issued a series of reports on the agency's efforts to modernize its retirement system and found that the agency was hindered by weaknesses in several important management disciplines that are

[12]See, for example, GAO, *Polar-Orbiting Environmental Satellites: With Costs Increasing and Data Continuity at Risk, Improvements Needed in Tri-agency Decision Making*, GAO-09-564 (Washington, D.C.: June 17, 2009); *Environmental Satellites: Polar-orbiting Satellite Acquisition Faces Delays; Decisions Needed on Whether and How to Ensure Climate Data Continuity*, GAO-08-518 (Washington, D.C.: May 16, 2008); *Polar-orbiting Operational Environmental Satellites: Restructuring Is Under Way, but Technical Challenges and Risks Remain*, GAO-07-498 (Washington, D.C.: Apr. 27, 2007); and *Polar-orbiting Environmental Satellites: Information on Program Cost and Schedule Changes*, GAO-04-1054 (Washington, D.C.: Sept. 30, 2004).

[13]GAO, *Polar-Orbiting Environmental Satellites: With Costs Increasing and Data Continuity at Risk, Improvements Needed in Tri-agency Decision Making*, GAO-09-564 (Washington, D.C.: June 17, 2009).

[14]GAO, *OPM Retirement Modernization: Longstanding Information Technology Management Weaknesses Need to Be Addressed*, GAO-12-226T (Washington, D.C.: Nov. 15, 2011).

essential to successful IT modernization efforts.[15] Accordingly, we made recommendations in areas such as project management, organizational change management, testing, cost estimating, and earned value management. In May 2008, an OPM official cited the issues that we identified as justification for issuing a stop work order to the system contractor, and the agency subsequently terminated the contract, which resulted in a cost reduction of $136.5 million between fiscal years 2009 and 2013.

VA's Scheduling Replacement Project

In September 2009, VA terminated its Scheduling Replacement Project, after spending an estimated $127 million over 9 years. The investment was to modernize its more than 25-year-old outpatient scheduling system, but the department had not yet implemented any of the planned system's capabilities. VA began a new initiative that it refers to as HealtheVet Scheduling on October 1, 2009. In May 2010, we reported that VA's efforts to successfully complete the Scheduling Replacement Project were hindered by weaknesses in several key project management disciplines and a lack of effective oversight that, if not addressed, could undermine the department's second effort to replace its scheduling system. As the department proceeded with future development, we recommended that it take actions to improve key processes, including acquisition management, system testing, and progress reporting, which are essential to the department's second outpatient scheduling system effort.

VA's Core Financial and Logistics System (CoreFLS)

VA's first attempt to develop an integrated financial and asset management system, CoreFLS, began in 1998 but was discontinued by the department in 2004 because the pilot system failed to support VA's

[15]GAO, *Office of Personnel Management: Retirement Modernization Planning and Management Shortcomings Need to Be Addressed*, GAO-09-529 (Washington, D.C.: Apr. 21, 2009); *Office of Personnel Management: Improvements Needed to Ensure Successful Retirement Systems Modernization*, GAO-08-345 (Washington, D.C.: Jan. 31, 2008); *Comments on the Office of Personnel Management's February 20, 2008 Report to Congress Regarding the Retirement Systems Modernization*, GAO-08-576R (Washington, D.C.: Mar. 28, 2008); and *Office of Personnel Management: Retirement Systems Modernization Program Faces Numerous Challenges*, GAO-05-237 (Washington, D.C.: Feb. 28, 2005).

operations after the department reportedly spent more than $249 million on development. The department conducted three independent assessments of the initiative that collectively identified 141 findings, which the department categorized into functional areas of responsibility such as acquisition management, organizational change management, program management, and systems engineering. VA aggregated these findings into a repository of lessons learned to inform future efforts. However, we reported in September 2008 that the department had not taken corrective actions to address all the findings, and recommended that it do so.[16] Subsequently, VA officials provided documentation showing that all items in the repository had been addressed.

VA's Financial and Logistics Integrated Technology Enterprise (FLITE) Program

In October 2011, VA terminated its FLITE program, an effort to deliver an integrated financial and asset management system for the department. Begun in 2005, the system was intended to be delivered by 2014 at a total estimated cost of $608.7 million but was canceled due to challenges in managing the program, including an unsuccessful pilot of the Strategic Asset Management system. The FLITE program was VA's second effort to develop such a system. We had reported in October 2009 that the department had not yet fully established capabilities needed to ensure that the program will be successfully implemented and recommended that it take steps to improve program management.[17]

VA's Health Information Systems and Technology Architecture—Foundations Modernization (VistA-FM)

In October 2010, VA terminated its VistA-FM program, which was to address the need to transition the VA electronic medical record system to a new architecture. As we reported in October 2009, the program, which had been estimated to cost $1.9 billion, had significant weaknesses in its earned value management processes, and we estimated that the

[16]GAO, *Veterans Affairs: Additional Details Are Needed in Key Planning Documents to Guide the New Financial and Logistics Initiative*, GAO-08-1097 (Washington, D.C.: Sept. 22, 2008).

[17]GAO, *Information Technology: Actions Needed to Fully Establish Program Management Capability for VA's Financial and Logistics Initiative*, GAO-10-40 (Washington, D.C.: Oct. 26, 2009).

program would likely overrun its budget at completion by about $350.2 million.[18] As a result of our recommendations and an internal department evaluation of the program, multiple components of the program were suspended, before the program was finally terminated in 2010.

Challenged IT Investments

In addition to canceling many failed projects, the government has continued to invest in challenged IT projects. The following are selected examples of such investments that have faced significant challenges:

- Department of Commerce/Census Bureau's 2010 Decennial Census
- Department of Commerce/NOAA's Geostationary Operational Environmental Satellite-R (GOES-R) Series
- DHS's Rescue 21 Program
- DHS's United States Visitor and Immigrant Status Indicator Technology (US-VISIT) Program
- DOD's Armed Forces Health Longitudinal Technology Application (AHLTA)
- DOD's Defense Enterprise Accounting and Management System (DEAMS)
- DOD's Global Combat Support System-Army (GCSS-Army)
- DOD's Global Combat Support System–Marine Corps (GCSS-MC)
- DOD's Navy Enterprise Resource Planning System (Navy ERP)
- DOD's Navy Next Generation Enterprise Network (NGEN)
- DOD/Department of the Treasury's Navy Cash Program
- DOD/VA's Integrated Electronic Health Record (iEHR)
- DOD/VA's Federal Health Care Center (FHCC)
- Food and Drug Administration's (FDA) Mission Accomplishments and Regulatory Compliance Services (MARCS)
- Internal Revenue Service's (IRS) Customer Account Data Engine (CADE)
- NASA's James Webb Space Telescope (JWST)
- U.S. Department of Agriculture's (USDA) Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) Program

We have identified challenges facing these projects, many due to ineffective or undisciplined management, and have made

[18]GAO, *Information Technology: Agencies Need to Improve the Implementation and Use of Earned Value Techniques to Help Manage Major System Acquisitions*, GAO-10-2 (Washington, D.C.: Oct. 8, 2009).

recommendations for improvement. The following provides additional information on these challenged IT investments.

Department of Commerce/Census Bureau's Decennial Census

At a cost of about $13 billion, the 2010 Decennial Census was the costliest in history. This was due, in part, to cost overruns and major performance problems with key IT systems. For example, the Census Bureau's Field Data Collection Automation (FDCA) program, originally estimated to cost $596 million, was intended to use handheld mobile devices to support field data collection for the census, including in-person follow-up with those who did not return their census questionnaires (nonresponse follow-up). However, we testified in March 2008 that the program was experiencing significant problems, including schedule delays and cost increases from changes in requirements.[19] We had previously reported that the FDCA project office had not implemented the full set of acquisition management capabilities that were needed to effectively manage the program and that the changes to requirements had been a contributing factor to both schedule delays and cost increases experienced by the FDCA program.

In April 2008, due to problems identified during testing and cost overruns and schedule slippages, the Secretary of Commerce announced a redesign of the 2010 Census, resulting in a $205 million increase in life-cycle costs. Also in April 2008, the Census Bureau decided not to use the handheld devices for nonresponse follow-up, but did continue to use the devices for other decennial census operations. Dropping the use of handhelds for nonresponse follow-up and replacing them with a paper-based system increased the cost of the Census by up to $3 billion. Although the bureau worked aggressively to improve the paper-based system that replaced the handheld computers, we reported in December 2010 that the paper-based system also experienced significant issues when it was put in operation.[20] For example, performance problems with the IT system used to manage the nonresponse follow-up process led to

[19]GAO, *Information Technology: Significant Problems of Critical Automation Program Contribute to Risks Facing 2010 Census*, GAO-08-550T (Washington, D.C.: Mar. 5, 2008).

[20]GAO, *2010 Census: Data Collection Operations Were Generally Completed As Planned, but Long-Standing Challenges Suggest Need for Fundamental Reforms*, GAO-11-193 (Washington, D.C.: Dec. 14, 2010).

processing backlogs, which hindered the bureau's ability to fully implement quality assurance procedures as planned. We recommended, accordingly, that the bureau incorporate best practices in its IT acquisition management policy. In September 2012, we reported that the Census Bureau still needed to implement key IT management practices to select, control, and evaluate its IT investments and effectively manage system development, as well as key practices for effective workforce planning, and recommended it take eight actions to do so.[21] Until such steps are taken, the bureau faces the risk that the same kind of IT management and implementation challenges that faced the 2010 Decennial Census will impact the 2020 Census.

Department of Commerce/NOAA's Geostationary Operational Environmental Satellite-R (GOES-R) Series

The Department of Commerce's NOAA, with the aid of NASA, is to procure the next generation of geostationary operational environmental satellites—a series of four satellites intended to replace existing weather satellites that will likely reach the end of their useful lives in about 2015. This new series is considered critical to the United States' ability to maintain the continuity of data required for weather forecasting. NOAA estimates that the GOES-R series will cost $10.9 billion through 2036; the launch of the first satellite is planned for October 2015. In September 2010, we reported that, since 2006, the launch dates of the first two satellites in the series have been delayed by about 3 years, which could lead to a gap in coverage if the existing weather satellites fail prematurely.[22] We also found that NOAA had not established adequate continuity plans in the event of a satellite failure with no backup available and that the agency had not adequately involved users at federal agencies that rely on GOES data in developing and prioritizing requirements. We recommended that NOAA address weaknesses in its continuity plans and improve its processes for involving other federal agencies. Subsequently, NOAA established a continuity plan for GOES-R

[21]GAO, *Information Technology: Census Bureau Needs to Implement Key Management Practices*, GAO-12-915 (Washington, D.C.: Sept. 18, 2012).

[22]GAO, *Geostationary Operational Environmental Satellites: Improvements Needed in Continuity Planning and Involvement of Key Users*, GAO-10-799 (Washington, D.C.: Sept. 1, 2010).

and developed a communications plan for involving agencies that depend on GOES data.

In June 2012 we reported that technical problems with instruments and spacecraft, among others, had delayed key reviews and led to increased complexity for the development of GOES-R.[23] While the program reported having $1.2 billion in reserve to manage future delays and cost growth, significant development remained, and we concluded that the program may not be able to ensure that it has adequate resources to cover ongoing challenges and unexpected problems. In addition, we found that the program's schedule contained deficiencies, and it had not fully implemented risk management best practices. We recommended that NOAA assess and report reserves needed over the life of the program and address the issues with its schedules and risk management. NOAA reported that it would take steps to implement these recommendations.

DHS's Rescue 21 Program

DHS's Rescue 21 program is intended to modernize the U.S. Coast Guard's maritime search and rescue communications capability. Since 2003, we have reported on significant weaknesses in the oversight and management of the program, including continued cost growth and schedule delays.[24] For example, in May 2006, we found that the estimated total acquisition cost for Rescue 21 had increased from $250 million in 1999 to $710.5 million in 2005, and the time line for achieving full operating capability had been delayed from 2006 until 2011.[25] We recommended that executive-level management oversee Rescue 21's progress toward cost and schedule milestones and manage risks; establish milestones to complete an integrated baseline review; and

[23]GAO, *Geostationary Weather Satellites: Design Progress Made, but Schedule Uncertainty Needs to be Addressed*, GAO-12-576 (Washington, D.C.: June 26, 2012).

[24]GAO, *Information Technology Cost Estimation: Agencies Need to Address Significant Weaknesses in Policies and Practices*, GAO-12-629 (Washington, D.C.: July 11, 2012); *Information Technology: Agencies Need to Establish Comprehensive Policies to Address Changes to Projects' Cost, Schedule, and Performance Goals*, GAO-08-925 (Washington, D.C.: July 31, 2008); *United States Coast Guard: Improvements Needed in Management and Oversight of Rescue System Acquisition*, GAO-06-623 (Washington, D.C.: May 31, 2006); and *Coast Guard: New Communications System to Support Search and Rescue Faces Challenges*, GAO-03-1111 (Washington, D.C.: Sept. 30, 2003).

[25]GAO-06-623.

develop revised cost and schedule estimates. More recently, in July 2012, we reported[26] that the Rescue 21 program's life-cycle cost estimate had grown to approximately $2.7 billion—an increase of approximately $2.4 billion since 1999[27]—and that completion was delayed to 2017. Program officials stated that increases in the cost estimate were due, in part, to additional schedule delays and more realistic estimates of future costs for ongoing system technology refreshment. However, we noted that the program's cost estimate did not exhibit all qualities of a reliable cost estimate and recommended that DHS direct responsible officials to update future life-cycle cost estimates using cost-estimating practices that address the weaknesses we identified.

DHS's United States Visitor and Immigrant Status Indicator Technology (US-VISIT) Program

DHS's US-VISIT program is charged with developing a biometric verification capability for non-U.S. citizens entering and leaving the country. From fiscal year 2002 to fiscal year 2012, DHS's US-VISIT program was appropriated over $3.5 billion, and the program has successfully developed a massive biometric database and deployed an entry capability. However, the program had not developed an exit capability and last conducted an exit pilot in 2009. We have reported on issues associated with key aspects of US-VISIT program management, such as risk management and the reliability of cost estimates and program schedules, as well as the lack of a completed strategic plan and the results of the 2009 exit pilot.[28] We recommended that DHS review the

[26]GAO-12-629.

[27]The Rescue 21 program's original cost estimate, developed in 1999, only included system acquisition costs and did not include costs for operating and maintaining the system. These costs were subsequently included in the program's 2005 revisions to the cost estimate.

[28]GAO, *Homeland Security: US-VISIT Pilot Evaluations Offer Limited Understanding of Air Exit Options*, GAO-10-860 (Washington, D.C.: Aug. 10, 2010); *Homeland Security: Key US-VISIT Components at Varying Stages of Completion, but Integrated and Reliable Schedule Needed*, GAO-10-13 (Washington, D.C.: Nov. 19, 2009); *Homeland Security: U.S. Visitor and Immigrant Status Indicator Technology Program Planning and Execution Improvements Needed*, GAO-09-96 (Washington, D.C.: Dec. 12, 2008); *Homeland Security: Strategic Solution for US-VISIT Program Needs to Be Better Defined, Justified, and Coordinated*, GAO-08-361 (Washington, D.C.: Feb. 29, 2008); and *Homeland Security: U.S. Visitor and Immigrant Status Program's Long-standing Lack of Strategic Direction and Management Controls Needs to Be Addressed*, GAO-07-1065 (Washington, D.C.: Aug. 31, 2007).

program's approach to risk management and earned value management, and that DHS develop a plan and integrated schedule for a comprehensive exit capability. We also recommended that the program incorporate additional sources of information when making future decisions about an exit capability. However, there are no known current plans to develop an exit process, and the President's fiscal year 2013 budget request called for eliminating a standalone US-VISIT program office and incorporating the program's mission into Customs and Border Protection and Immigration and Customs Enforcement. We have ongoing recommendation follow-up work regarding this issue.

DOD's Armed Forces Health Longitudinal Technology Application (AHLTA)

DOD has obligated approximately $2 billion over 13 years to acquire an electronic health record system—referred to as its AHLTA initiative. In October 2010, we reported that DOD had delivered various capabilities for outpatient care and dental care documentation, but it scaled back other capabilities it had originally planned to deliver, such as replacement of legacy systems and inpatient care management.[29] In addition, users continued to experience significant problems with the performance (speed, usability, and availability) of the portions of the system that have been deployed. These problems were due in part to weaknesses in key acquisition management and planning processes. DOD initiated efforts to improve system performance and enhance functionality and plans to continue its efforts to stabilize the AHLTA system through 2015, as a "bridge" to the new electronic health record system it intends to acquire. According to DOD, the planned new electronic health record system—known as the EHR Way Ahead—is to be a comprehensive, real-time health record for service members and their families and beneficiaries. To help better manage these efforts, we recommended that DOD take six actions to help ensure that it has disciplined and effective processes in place to manage the acquisition of further electronic health record system capabilities.

[29]GAO, *Opportunities Exist to Improve Management of DOD's Electronic Health Record Initiative*, GAO-11-50 (Washington, D.C.: Oct. 6, 2010).

DOD's Defense Enterprise Accounting and Management System (DEAMS)

The Air Force's DEAMS is the agency's target accounting system designed to provide accurate, reliable, and timely financial information. In March 2012, we reported that DEAMS faced a 2-year deployment delay and an estimated cost increase of about $500 million from its original life-cycle cost estimate of $1.1 billion, an increase of approximately 45 percent.[30] Further, in February 2012, we reported that assessments by DOD users had identified operational problems with the system, such as data accuracy issues, an inability to generate auditable financial reports, and the need for manual workarounds.[31] We recommended that DOD take actions to ensure the correction of system problems prior to further system deployment, including user training. In July 2012, the DOD Inspector General reported that the DEAMS schedule delays were likely to diminish its intended cost savings and would jeopardize the department's goals for attaining an auditable financial statement.

DOD's Global Combat Support System-Army (GCSS-Army)

GCSS-Army is intended to improve the Army's supply chain management capabilities and provide accurate equipment readiness status reports, among other things. In March 2012, we reported that GCSS-Army was experiencing a cost overrun of approximately $300 million on an original life-cycle cost estimate of $3.9 billion (an increase of approximately 8 percent) and a deployment delay of approximately 2 years.[32] Among other things, we recommended that DOD ensure any future system deficiencies identified through independent assessments are resolved or mitigated prior to further deployment of the system. In addition, because the DOD CIO rated GCSS-Army as low or moderately low risk from July 2009 through March 2012 on OMB's federal IT Dashboard, we recommended that the department's CIO reassess the department's considerations for assigning risk levels to investments on the Dashboard, to include external assessments of performance and risk.

[30]GAO, *DOD Financial Management: Reported Status of Department of Defense's Enterprise Resource Planning Systems*, GAO-12-565R (Washington, D.C.: Mar. 30, 2012).

[31]GAO-12-134.

[32]GAO-12-565R.

DOD's Global Combat Support System–Marine Corps (GCSS-MC)

GCSS-MC is intended to provide the deployed warfighter enhanced capabilities in the areas of warehousing, distribution, logistical planning, depot maintenance, and improved asset visibility. In July 2008, we reported that not effectively implementing key IT management controls, such as economically justifying investment in the system, had in part contributed to a 3-year schedule slippage and a cost overrun of about $193 million on the first phase of the program and would likely contribute to future delays and overruns if not corrected.[33] Accordingly, we made recommendations to address the identified deficiencies, such as cost and schedule estimating, risk management, and system quality measurement weaknesses. In October 2010,[34] we reported that GCSS-MC faced a 3-year deployment delay on phase 1. We also reported in March 2012 that GCSS-MC faced an estimated cost increase of about $970 million from its original life-cycle cost estimate of $126 million.[35] As of December 2011, the life-cycle cost estimate was estimated to be $1.1 billion, and a revised full deployment date was being considered.

DOD's Navy Enterprise Resource Planning System (Navy ERP)

Navy ERP is intended to standardize the acquisition, financial, program management, maintenance, procurement, plant and wholesale supply, and workforce management capabilities of the Navy. In March 2012, we reported that Navy ERP faced a 2-year deployment delay and an estimated cost increase of about $1 billion from its original life-cycle cost estimate of $1.87 billion.[36] This estimate was later revised in August 2004, December 2006, and again in September 2007 to $2.4 billion. In October 2010,[37] we reported that these slippages occurred, in part, because of problems experienced in data conversion and adopting new business

[33]GAO, *DOD Business Systems Modernization: Key Marine Corps System Acquisition Needs to Be Better Justified, Defined, and Managed*, GAO-08-822 (Washington, D.C.: July 28, 2008).

[34]GAO-11-53.

[35]GAO-12-565R, DOD's GCSS-MC Program Management Office and historical data as reported in GAO-11-53.

[36]GAO-12-565R.

[37]GAO-11-53.

procedures associated with implementing the Navy ERP. Moreover, in September 2008,[38] we reported that not effectively implementing key IT management controls, such as earned value management, had contributed to the more than 2-year schedule delay and almost $600 million cost overrun on the program since it began, and would likely contribute to future delays and overruns if not corrected. Accordingly, we made recommendations to address the identified deficiencies, such as improving cost and schedule estimating, earned value management, and risk management weaknesses.

DOD's Navy Next Generation Enterprise Network (NGEN)

DOD's NGEN is to replace the Navy Marine Corps Intranet program and include capabilities such as secure transport of voice and data, data storage, and e-mail, to be incrementally acquired through multiple providers. The program, which is expected to cost about $38 billion through fiscal year 2024, had weaknesses in its acquisition approach. Specifically, in March 2011, we reported that the program was not well positioned to meet its cost and schedule estimates.[39] For example, the department had not sufficiently analyzed alternative acquisition approaches and did not have a reliable schedule for executing NGEN. We recommended DOD limit further investment until it conducted an interim review to reconsider the selected acquisition approach and addresses its investment management issues. In September 2012, we reported that while DOD had revised its acquisition approach, it was still suffering from management issues related to measuring cost effectiveness, completing milestones on schedule, and mitigating risk.[40]

[38]GAO, *DOD Business Systems Modernization: Important Management Controls Being Implemented on Major Navy Program, but Improvements Needed in Key Areas*, GAO-08-896 (Washington, D.C.: Sept. 8, 2008).

[39]GAO, *Information Technology: Better Informed Decision Making Needed on Navy's Next Generation Enterprise Network Acquisition*, GAO-11-150 (Washington, D.C.: Mar. 11, 2011).

[40]GAO, *Next Generation Enterprise Network: Navy Implementing Revised Approach, but Improvement Needed in Mitigating Risks*, GAO-12-956 (Washington, D.C.: Sept. 19, 2012).

DOD/Department of the Treasury's Navy Cash Program

Initiated in 2001, Navy Cash is a joint Department of the Navy and Department of the Treasury Financial Management Service program to create a cashless environment on ships using smart card technology. It was estimated to cost about $320 million to fully deploy. In 2008, we reported that the system had not been assessed and defined in a way to ensure that it was not duplicative of programs in the Air Force and the Army that use smart card technology, nor economically justified on the basis of reliable analyses of estimated costs and expected benefits over the program's life.[41] In addition, we reported that system requirements and system security had not been effectively managed. Program oversight and management officials acknowledged the weaknesses and cited turnover of staff in key positions and their primary focus on deploying Navy Cash as reasons for the state of some of the IT management controls. We concluded that after investing about 6 years and $132 million on Navy Cash and planning to invest an additional $60 million to further develop the program, the department had yet to demonstrate through verifiable analysis and evidence that the program, as currently defined, was justified. Accordingly, we recommended that investment of modernization funding in the program be limited until a basis for informed decision making was established, and that other program management weaknesses were corrected.

DOD/VA's Integrated Electronic Health Record (iEHR)

DOD and VA have been challenged over the last 15 years on a variety of initiatives to share data among the departments' health information systems. In March 2011, the Secretaries of DOD and VA committed their two departments to developing a new common iEHR, and in May 2012 announced their goal of implementing it across the departments by 2017. According to the departments, the decision to pursue iEHR would enable DOD and VA to align resources and investments with common business needs and programs, resulting in a platform that would replace the two departments' electronic health record systems with a common system. The departments estimated the life-cycle cost of this effort at about $25 billion. However, as we noted in a recent testimony, the Secretaries

[41]GAO, *DOD Business Systems Modernization: Planned Investment in Navy Program to Create Cashless Shipboard Environment Needs to Be Justified and Better Managed*, GAO-08-922 (Washington, D.C.: Sept. 8, 2008).

announced in February 2013 that instead of developing a new common integrated electronic health record system, the departments would focus on integrating health records from separate DOD and VA systems.[42] VA has stated that it will continue to modernize its existing system, called VistA, while pursuing the integration of health data, while in May 2013, DOD announced that it planned to purchase a commercial off-the-shelf product. The Secretaries offered several reasons for this new direction, including cutting costs, simplifying the problem of integrating DOD and VA health data, and meeting the needs of veterans and service members sooner rather than later. Nevertheless, the departments' recent change in the program's direction and history of challenges to improving their health information systems heighten concern about whether this latest initiative will be successful.

DOD/VA's Federal Health Care Center (FHCC)

DOD and VA jointly undertook an IT project to support the FHCC in North Chicago, Illinois, which is the first medical facility to serve both departments' patient populations while operating under a single line of authority. As we reported in February 2011, despite an investment of more than $122 million, none of the FHCC's required IT capabilities had been implemented as planned when the center opened in October 2010.[43] While system components to support single sign-on and single-patient registration became operational in December 2010, a component to support medical consults was not expected to be completed until March 2013, and the departments did not have a schedule for completion of the component to support pharmacy. We recommended that the departments strengthen their joint IT system planning efforts for the FHCC by developing plans that include scope definition, cost and schedule estimation, and project plan documentation and approval. We also noted that the two departments face barriers in three key IT management areas—strategic planning, enterprise architecture, and investment management—and recommended steps for improvement.

[42]GAO, *Electronic Health Records: Long History of Management Challenges Raises Concerns about VA's and DOD's New Approach to Sharing Health Information*, GAO-13-413T (Washington, D.C.: Feb. 27, 2013).

[43]GAO, *Electronic Health Records: DOD and VA Should Remove Barriers and Improve Efforts to Meet Their Common System Needs*, GAO-11-265 (Washington, D.C.: Feb. 2, 2011).

FDA's Mission Accomplishments and Regulatory Compliance Services (MARCS)

FDA's MARCS program is intended to automate workflow, help track and manage information about firm compliance with FDA's regulations, and eliminate FDA's existing stove-piped databases. However, the program has been rebaselined five times since 2002, the total estimated cost has grown from $221.4 million to $282.7 million, and the estimated completion date for initial development has slipped from September 2008 to October 2016. According to OMB exhibit 53s from 2004 to 2013, FDA has spent approximately $160 million from fiscal year 2002 to fiscal year 2011 on MARCS. In March 2012, we reported FDA had not developed a comprehensive integrated master schedule for MARCS that would allow the agency to effectively gauge progress.[44] We further reported that the agency was reevaluating the scope of the initiative and concluded that, until this assessment was complete, it was uncertain how or when much of the intended functionality and improvements associated with MARCS would be delivered. We recommended that FDA, in completing the assessment of MARCS, develop an integrated master schedule that identifies which legacy systems will be replaced and when; identifies all current and future tasks to be completed; and defines and incorporates information reflecting needed resources and critical dependencies. We further recommended that the agency use this schedule to monitor the progress of MARCS.

IRS's Customer Account Data Engine (CADE)

In December 2011, IRS ended further development of CADE, its effort to replace legacy systems for storing, managing, and accessing individual taxpayer accounts. IRS started developing this system in 2002 to replace the legacy Individual Master File processing system and house tax information for more than 40 million taxpayers while providing faster return processing and refunds. In December 2009, we reported that after over 5 years and $400 million, CADE was only processing about 15

[44]GAO, *Information Technology: FDA Needs to Fully Implement Key Management Practices to Lesson Modernization Risks*, GAO-12-346 (Washington, D.C.: Mar. 15, 2012).

percent of the functionality originally planned for completion by 2012.[45] In addition, each successive release of the system was expected to process more complex returns, but several technical challenges had not been addressed. Given this, IRS estimated that full implementation of CADE would not be achieved until at least 2018 or possibly as late as 2028. As a consequence, in 2011 IRS decided to stop development of new CADE functionality and rethink its strategy for modernizing individual taxpayer accounts to determine whether an alternative approach could deliver improvements sooner. This led to the development of CADE 2, a new program for replacing the Individual Master File. Beginning in January 2012, IRS started using CADE 2 to process returns daily and issue refunds faster for about 84 million taxpayers. As of January 2013, IRS reported that there have been no significant problems with the system.

NASA's James Webb Space Telescope (JWST)

NASA's JWST project is designed to advance understanding of the origin of the universe. Since 2006, we have identified a range of issues with the project. For example, in July 2006, we reported[46] that the JWST project had experienced cost growth exceeding $1 billion—which increased its life-cycle cost estimate from $3.5 billion to $4.5 billion—and its launch date had slipped nearly 2 years to 2013. We also found that the program was not fully adhering to a knowledge-based acquisition approach, which ensures that resources match requirements in terms of knowledge, time, and money before program start. Accordingly, we recommended that the program apply such an approach. In October 2009, we reported that as of May 2009, the JWST contractor exceeded its planned cost target by $224.7 million and had not completed $9.4 million in planned work.[47] A key driver in this cost overrun was greater-than-expected complexity in the work, which required additional resources. We concurred with the contractor's estimate that it would overrun its budget—worth approximately $1.3 billion—by $448.5 million. We also found that the program had not fully implemented practices for earned value management and recommended steps for improvement. In 2011, the

[45]GAO, *2009 Tax Filing Season: IRS Met Many 2009 Goals, but Telephone Access Remained Low, and Taxpayer Service and Enforcement Could Be Improved*, GAO-10-225 (Washington, D.C.: Dec. 10, 2009).

[46]GAO-06-634.

[47]GAO-10-2.

project finalized a major replanning that resulted in further growth to the project's expected costs, as well as additional delays to its expected launch date. On the basis of the replanning, NASA announced that the project would be rebaselined at approximately $8.8 billion—a 78 percent increase to the project's life-cycle cost compared to the previous baseline—and would launch in October 2018—a delay of 52 months.

USDA's Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) Program

USDA's MIDAS program is intended to modernize the IT systems supporting the Farm Service Agency's 37 farm programs. As we reported in July 2011, the implementation cost estimate is approximately $305 million, with a life-cycle cost of approximately $473 million.[48] However, we found that the implementation cost estimate was uncertain because it had not been updated since 2007, and the program schedule had not been updated to account for delays. In addition, we reported that the program's management approach, while including many leading practices, could be strengthened. Finally, we found there was a lack of clarity and definition regarding the roles of executive-level governance bodies responsible for overseeing the program. We recommended that USDA update cost and schedule estimates, address management issues, and clarify the roles and coordination among governance bodies.

[48]GAO, *USDA Systems Modernization: Management and Oversight Improvements Are Needed,* GAO-11-586 (Washington, D.C.: July 20, 2011).

Mr. MICA. Thank you.
We will go now to OMB, Mr. VanRoekel. You are recognized.

STATEMENT OF THE HONORABLE STEVEN VANROEKEL

Mr. VANROEKEL. Thank you. Good morning, Chairman Mica and members of the committee. Thank you for this opportunity to testify on the Administration's efforts to improve the management of Federal information technology.

Since day one, the Administration has focused on harnessing technology to improve the operations of Government and better serve the American people. As I saw through my nearly 20 years in the private sector, including a stint as an assistant to Microsoft's founder, Bill Gates, the innovative application of technology can transform organizations, enabling them to improve service delivery and expand customer value, while also cutting costs. As a Federal Chief Information Officer and now Acting Deputy Director for Management at the Office of Management and Budget, I am charged with bringing my experience and tools from the private sector to help take Government built for the 20th century into the 21st.

This fundamentally requires a shift in how we think and how we operate. As leading private sector companies do, we must relentlessly focus on outcome and results; work collaboratively across traditional organizational boundaries; drive innovation; foster accountability; and, above all, put our customer, the American people, first. High-performing organizations are results-driven, focused on customer-facing outcomes rather than inward-looking outputs. They set business-oriented targets, such as revenue and profit goals, and then let operating units determine how best to achieve them.

This thinking underpins our revamped approach to data center consolidation. Whereas, early on we looked primarily at raw outputs, tasking agencies with counting the number of data centers and tallying closures, we are now building on that first work by taking an outcome-and incentive-based approach, focusing on optimizing total cost of ownership and efficiency of operations instead of just the number of data centers. Agencies are now developing metrics that drive the outcomes we want to see: lower costs and higher productivity. Beyond closures and savings, we are now tracking metrics, including energy, facilities, labor, virtualization, and cost per operating system in these data centers.

Additionally, successful enterprises are not constrained by traditional organizational boundaries, and operate in an integrated and unified manner. In the case of IT's, this means treating CIO's as strategic partners, on par with the other parts of the business. That is why, through PortfolioStat, a data-driven review of agency IT portfolios, I am pulling together agency leaders: deputy secretaries, CIO's, CFO's, CAO's, chief human capital officers, and program officials. We all sit around the table and ask them to engage beyond their individual roles to make decisions collaboratively with a focus on delivering value to the American people.

In taking this holistic approach to governance, we are aiming to avoid one-off isolated actions that can lead to unintended consequences. And by working as an integrated leadership team, we can better identify and eliminate duplicative and redundant invest-

ments that drain vital resources from mission-facing programs and activities.

However, just as with any leading private sector initiative, the success of PortfolioStat hinges on being able to hold leadership accountable for results. This is why a key part of the annual PortfolioStat process is following up on commitments made in the previous cycle and evaluating agencies on progress over the prior year, something we do quarterly.

This is also why we are sharing the results of our efforts to generate efficiencies across the IT portfolios with Congress through our IUIT report, the way we track cost-savings. To date, agencies have reported over $800 million in savings from PortfolioStat alone, with more on the way, and I am very proud that, as of this morning, slightly over a year of having this process in place and this cost-saving track in place, we are announcing that we reached $1.37 billion.

But to achieve breakthrough results, we must drive innovation throughout the Government. Innovative new technologies such as cloud computing, open data, mobile, are transforming how IT services are delivered and consumed. Through these new technologies, CIOs must shift from maintaining high-risk, high-failure monolithic systems, many of which you have highlighted here, that sap these IT development budgets. We need to shift to using services comprised of small, agile modules that lower risk and support emerging needs.

In the end, all of our efforts must be in service for the customer, the American people. The aim is to provide agencies the ability to allocate their resources to high-value, mission-oriented activities, rather than commodity and back office functions, so the Government can focus on what matters most, the citizen.

We have made significant progress over the past year, but work is yet to be done. We must continue to engage agency leadership through the PortfolioStat process, hold agencies accountable for the results, track savings, and keep our sights set on building the Government on the 21st century.

Thank you.

[Prepared statement of Mr. VanRoekel follows:]

[EMBARGOED UNTIL 9:30 AM, JULY 25]

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

TESTIMONY OF STEVEN VANROEKEL
ACTING DEPUTY DIRECTOR FOR MANAGEMENT
FEDERAL CHIEF INFORMATION OFFICER,
ADMINISTRATOR FOR E-GOVERNMENT AND INFORMATION TECHNOLOGY,
OFFICE OF MANAGEMENT AND BUDGET
BEFORE THE HOUSE COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM
SUBCOMMITTEE ON GOVERNMENT OPERATIONS
UNITED STATES HOUSE OF REPRESENTATIVES

July 25, 2013

Good morning, Chairman Mica, Ranking Member Connolly, and Members of the Subcommittee. Thank you for this opportunity to testify on the Administration's efforts to improve the management of Federal Information Technology (IT) investments and the use of data centers and cloud computing across the Federal Government.

Since day one, the Administration has been focused on harnessing the power of technology to improve the operations of Government and deliver better service to the American people. While our IT investments make up a relatively modest portion of total Government spending, they have far-reaching impacts and touch upon almost every aspect of Government activity. And as I saw throughout my nearly twenty year career in the private sector, the innovative application of technology can transform organizations – enabling them to tap into new markets, streamline operations, and do more with less. As the Federal Chief Information Officer (CIO) and Acting Deputy Director for Management at the Office of Management Budget (OMB), I am charged with bringing that same mindset to Government agencies. I come to work every day with my sights set on building the IT organization of the future, the agency of the future, and the Government of the future that will best serve the American people.

We have already taken significant steps forward to help get us there. In March 2012, OMB launched PortfolioStat[1] to take an objective, data-driven look across agencies to identify common areas of spending with the intent of reducing duplication and lowering costs. So far, we have identified nearly 100 opportunities to consolidate or eliminate redundant or otherwise unnecessary IT investments representing more than $2.5 billion in potential savings that can be

[1] http://www.whitehouse.gov/sites/default/files/omb/memoranda/2012/m-12-10_1.pdf.

achieved from Fiscal Year (FY) 2013 through FY 2015. Agencies have already reported approximately $800 million in realized savings and more on the way. Currently, we are in the process of conducting FY 2013 PortfolioStat[2] sessions and we look forward to continued progress and identification of further opportunities for improvement across the Federal IT portfolio. Under PortfolioStat, we are rationalizing our outdated IT infrastructure through the Federal Data Center Consolidation Initiative (FDCCI). As of May 2013, agencies have closed 484 data centers, with a total of 855 planned closures by the end of FY 2013.

To innovate our government, we launched the Digital Government Strategy in May of 2012. This effort enabled us to reboot how our Government architects and operates IT systems, open up Government data to streamline agency operations and harness the innovative spirit of the American people, and drive the use of mobile computing and other innovative technologies and approaches. In May 2013, the President issued an Executive Order[3] and launched the Administration's new Open Data Policy, taking concrete steps to make Government data more accessible and useful for the public and entrepreneurs to ignite economic growth and innovation.

We look forward to continuing to build on these accomplishments as we move forward, as today's challenging economic times only emphasize the need to continue to drive innovation and efficiency in our Government. We need to continue to harness the transformative power of IT to enable our government to deliver more for the American people at lower costs. And as technology evolves at an ever-increasing pace, we need to continually look for new ways to better serve the citizen. We must keep our sights set on building the IT organization of the future. We must continually strive for ideal.

Technology Organizations Designed to Deliver

Information technology enables us to deliver mission services to customers – in our case, the American people. The most effective technology organizations are able to focus on higher-value, mission-oriented activities rather than on commodity and back-office functions, as those activities are routinely being implemented well. For example, instead of focusing on email traffic, they focus on air traffic; instead of focusing on server farms, they focus on serving farmers. Chief Information Officers should also serve as catalysts for innovation – bringing in new technologies, such as cloud services and mobile computing, to improve customer service, maximize return-on-investment, and spark innovation across the agency. Agency CIOs must partner with those leading mission delivery units to together focus on most efficiently and effectively delivering customer-facing outcomes.

Getting There

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[2] http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-09.pdf.

3 http://www.gpo.gov/fdsys/pkg/DCPD-201300318/pdf/DCPD-201300318.pdf.

Getting to the ideal IT organization, within agencies, requires a shift in how we think and how we operate. To get this right, we need to think not in terms of how to do things but rather in terms of what to do; not in terms of individual investments or stove piped organizational silos but rather in terms of entire investment portfolios and integrated management teams; not in terms of monolithic purpose-built systems but rather in terms of reusable component-based solutions. This is the shift we are undertaking now through PortfolioStat and other management efforts.

Focusing on Outcomes: Shifting From "How" to "What"

To be truly effective, CIOs need to be able to exercise leadership in IT governance, spending, security, and program management across the enterprise. The needs of our customers – the American citizens – drive the "what" the CIOs help to determine the "how." This thinking underpins the recent shift in the approach to data center consolidation. In the initial stages of the effort, it was necessary to focus on data center counts and physical closures. Today, we are looking at new incentives are focused on a more outcome-based approach, to improve the overall efficiency and effectiveness of data center operations to optimize total cost of ownership. To this end, as we evolve the FDCCI as part of the FY 2013 PortfolioStat process, we are developing a comprehensive suite of outcome-focused metrics. The metrics – to be finalized later this summer – will span the full range of data center capabilities, and include energy, facility, labor, storage, virtualization, and cost-per-operating system metrics.

Additionally, given the current state of technology, we realized it does not make sense to treat all data centers the same. We first expanded the scope of our data center inventory to a broader range of sizes to better assess the current state, and we then established the concepts of core and non-core data centers. A core data center is a highly-optimized, multi-use facility that serves as a fulcrum for mission service delivery, anchors the agency's platform for shared services, and provides rigorous and ironclad processes for security and redundancy. Non-core data centers are any remaining agency data centers not meeting this definition.

To best achieve our desired outcomes, we are asking agencies to continue to consolidate non-core data centers and to optimize the efficiency of core data centers for total cost of ownership under the FDCCI. We believe this approach provides agencies with the right incentives and measures to drive behavior that will optimize the Federal Government's use and allocation of its computing resources.

Designing for Re-Use

Recent advances in technology, such as cloud computing and collaborative, modular development, are transforming how IT services are delivered and consumed. These shifts are forcing agencies to think more in terms of reusable components as opposed to purpose built systems. By providing "technology-as-a-service," cloud and services based approaches offer a viable alternative to building more data centers. In most cases, agencies no longer need to make

costly investments in large-scale data centers when computing power and IT services are readily available on demand. Chief Information Officers can shift from maintaining monolithic systems that sap budgets for new development to establishing platforms built on smaller modules that reduce the risk surface of large investments and support emerging needs across the agency.

Analyzing the Enterprise

TechStats, initiated in January 2010, were designed as face-to-face, evidence-based accountability reviews of IT investments that enabled the Federal Government to intervene to turn around, halt or terminate agency IT projects that were failing or not producing results for the American people. As such, TechStats were an important first step in curbing wasteful IT spending.

PortfolioStat represents the next step in shifting the focus for how we manage Federal IT. The intent of PortfolioStat is to provide agency leadership with a forum to collectively examine IT strategies, targeted outcomes, and overarching management processes across the portfolio, and to identify opportunities for improvement.

By taking this more holistic view of IT at the portfolio level, rather than at a siloed investment level, it allows us to uncover additional opportunities for streamlining IT investments and reducing IT spending. So, while the initial success of PortfolioStat generated significant cost reduction opportunities in areas of commodity IT by consolidating or eliminating duplicative systems, or through making bulk IT purchases, going forward we are taking PortfolioStat to the next level by further analyzing spending and integrating FDCCI and cloud efforts with enterprise portfolio management decisions. In taking such a broad, integrated view, we can get at the root of the systemic issues which have led to the large-scale failures, cost overruns and schedule delays that have for too long plagued our largest and often most important IT investments.

Agency leaders, whether CIOs, Chief Acquisition Officers, Chief Financial Officers, Chief Human Capital Officers or Program Officials, must engage beyond their individual roles and be strategic partners to ensure that decisions are driven by cross-functional data in the best interests of the American people. The PortfolioStat process fosters this cultural shift by driving consensus-driven decision making, rather than one-off, isolated actions that may lead to unintended consequences, benefitting one organization at the expense of another.

I appreciate this committee's interest and continuing support. Thank you again for the opportunity to appear before the committee today and I look forward to answering your questions.

Mr. MICA. Thank you.

We will hear from our final witness on the panel, Mr. David McClure, and he is with GSA. Welcome and you are recognized.

STATEMENT OF DAVID L. MCCLURE

Mr. MCCLURE. Thank you, Chairman Mica, and thanks, members of the subcommittee, for having me here today to talk about our efforts in data center consolidation and our partnership with OMB and our sister agencies to optimize new technologies being put into the Government. I want to focus on how my office at GSA is working in concert with OMB, the CIO Council to strengthen Government approaches to IT management, including consolidation and cloud security.

As Steve noted in his remarks, our present approach with data center consolidation efforts in the Federal Government is focused on economies of scale and achieving greater efficiencies and overall IT portfolios by optimizing core data center performance. This is more meaningful than a singular focus on closure counts as the primary measure of success.

Our role at GSA is to work in concert with OMB, the CIO Council, and its Federal Data Center Consolidation Task Force to assemble a complete view of the data center inventory and key variables affecting operational performance, and we do that by providing practical tools, standard data collection templates, guidance to the agencies for planning and executing their strategies, and consolidating their data centers.

For example, we have created an online inventory portal where agencies can download the data being requested for their strategies and plans. We have developed a tool that helps agencies identify and select their core data centers. The tool uses nine draft criteria that we have reached consensus on Government-wide. Most importantly, we have built a world-class total cost of ownership model to facilitate robust data analysis, optimization planning, and data-driven decision-making, and it is now being used by all 24 CFO Act agencies.

Industry experts and GAO have given the model very positive assessments. It allows agencies to analyze different scenarios to calculate the effects of different data center optimization strategies. It also allows, for the first time, an apples-to-apples comparison with other agencies as they examine outsourcing and cloud infrastructure options. Of course, we continue to expect to enhance the model with continued input from the CIO Council and from OMB.

We are working in concert with the community on multiple fronts to get better results with IT investments being made in the Federal Government. The Federal Government, for the first time, has a comprehensive inventory of its data centers, one of the largest cost items in the Federal IT portfolio. As a result of our data collection and our TCO data model, agency CIO's have more transparency into how these centers are being utilized and viable options for optimizing their operational performance.

In summary, the partnership that Steve and I have forged between our offices for management change is grounded in our own private sector experience, using industry-leading practices that emphasize data-driven decision-making. I think Steve is bringing the

power of performance metrics to bear on the Federal CIOs as a lever for change.

I want to thank you for having me here this morning. I am happy to answer any questions about GSA and our role. I really appreciate the leadership of this subcommittee and the full committee, because it is paramount to IT reform success, and we welcome continued interactions with you and your staff as we find meaningful ways to facilitate effective Federal IT investment results. And I would be happy to answer any questions from the subcommittee.

[Prepared statement of Mr. McClure follows:]

STATEMENT OF

Dr. David McClure
Associate Administrator
Office of Citizen Services and Innovative Technologies
General Services Administration

BEFORE THE

HOUSE COMMITTEE ON OVERSIGHT AND GOVERNMENT REFORM

SUBCOMMITTEE ON GOVERNMENT OPERATIONS

"Data Centers and the Cloud, Part II: The Federal Government's Take on Optimizing New Information Technologies Opportunities to Save Taxpayers Money"

July 25, 2013

Chairman Mica, Ranking Member Connolly, and Members of the Subcommittee:

Thank you for the opportunity to appear before you today to discuss GSA's role in the Federal Data Center Consolidation Initiative (FDCCI). We are fully committed to helping our agency partners achieve significant government-wide gains in efficiency and operational excellence through data center consolidation, and appreciate the Committee's leadership in ensuring the effectiveness of this important initiative.

Background

The Administration launched the Federal Data Center Consolidation Initiative (FDCCI) in 2010 to stem the large increase in federal data centers that had occurred over the past decade. Establishment of the FDCCI coincided with the initial drive to migrate federal IT infrastructure to cloud computing solutions, providing a framework for development of a baseline inventory that would enable agencies to make data-driven decisions about how to gain efficiencies and achieve cost savings within their IT infrastructure. Initially, four high level goals were defined:

- Promote the use of Green IT by reducing the overall energy and real estate footprint of government data centers
- Reduce the cost of data center hardware, software, and operations
- Increase the overall IT security posture of the government
- Shift IT investments to more efficient computing platforms and technologies

In February 2010, the then Federal CIO issued guidance requiring agencies to identify their existing data center assets and formulate detailed consolidation plans that include a roadmap and consolidation targets. Specific requirements include:

- Conduct an initial inventory of data center assets and provide a complete inventory update annually

- Formulate and maintain a data center consolidation plan that identifies centers for consolidation, opportunities for optimization through server virtualization or cloud computing, and incorporate this plan into annual agency budgets

- Prepare a high level roadmap to transition to the consolidated end state architecture

Over the past three years, these goals and requirements have evolved to shift emphasis toward portfolio management, as agencies work to optimize and consolidate their data center populations.

GSA Role

GSA's Office of Citizen Services and Innovative Technologies administers the inventory of agency assets, collects data from agencies, and supports the Federal CIO Council's Data Center Task Force (Task Force). We provide agencies with practical tools, templates and guidance to effectively plan and execute their strategies to consolidate and close data centers.

We also maintain the on-line data center inventory portal, and provide analytics to Office of Management and Budget (OMB) based on the inventory data submitted by agencies. Each agency is responsible for the quality and accuracy of the data they submit; agency Chief Information Officers (CIOs) are responsible for the validity of the inventory data submitted. We are responsible for reviewing agency inventories to identify missing information -- data fields that have not been completed. We do not verify or determine the extent to which the data provided accurately reflects an agency's actual assets. We coordinate closely with the Task Force members and OMB to help agencies achieve our shared objectives, and strive to meet emerging needs with on-going program improvements.

Inventory Reporting

Initially, OMB required agencies to report only data centers that were greater than 500 square feet in size and that met one of the tier data center classifications defined by the

Uptime Institute. Based on that definition, the first data center inventory, reported in October 2010, identified the data center asset baseline as 2,094 data centers. In December 2010, OMB issued the 25 Point Implementation Plan to Reform Federal Information Technology Management, which set a target for agencies to consolidate at least 800 data centers, which was approximately close 40% of agency reported data centers, by the end of 2015.

Once these initial results were examined, OMB determined that this approach did not capture a significant segment of agency infrastructure assets that could be consolidated and optimized. Data provided through April 30, 2013 indicated that more than 70% of agency data center assets are less than 500 square feet, with many of those assets 100 square feet or less. Although the individual budgets for these server 'closets' are low and often contain embedded costs in overall building utilities, in aggregate across government, the costs of these data centers are significant. To achieve meaningful and sustainable infrastructure optimization, it is critical that agencies plans include the consolidation of these smaller assets into large, core data centers that address broad agency needs, for example shared and enterprise services.

To address this gap, the data center definition was changed in late 2011 and officially clarified in March 2012. Under the FDCCI, a data center is now defined as "a closet, room, floor or building for the storage, management, and dissemination of data and information. Such a repository houses computer systems and associated components, such as database, application, and storage systems and data stores. A data center generally includes redundant or backup power supplies, redundant data communications connections, environmental controls (air conditioning, fire suppression) and special security devices housed in leased (including by cloud providers), owned, collocated, or stand-alone facilities.[1]

As you would expect, this broader definition resulted in agencies identifying and reporting higher number of data centers. While this has created challenges in defining the government-wide inventory baseline, it provides a far more accurate view of each agency's enterprise assets, and enables more comprehensive portfolio analysis.

Agencies directly upload asset inventory information using standard templates to an on-line Inventory Portal that we developed to automate reporting and ensure

[1] This definition excludes facilities exclusively devoted to communications and network equipment (e.g., telephone exchanges and telecommunications rooms).

consistency. Agencies are responsible for data quality, accuracy, and completeness, and can review, correct and augment information as needed. As required by OMB, they must update closure information quarterly and their entire inventory on an annual basis. Each agency has access to its own information, but cannot access information of other agencies. The portal provides portfolio level transparency, enabling analysis and planning, both by agency managers and OMB. It gives OMB insight on government-wide asset inventory accuracy and completeness, which is critical to achieve optimization of the Federal IT enterprise.

Core Data Center Selection

The FDCCI has shifted from focusing strictly on closures to measuring efficiency of agency data centers in the context of overall agency IT portfolios. Based on the March 27, 2013 PortfolioStat memo from OMB, the FDDCI Task Force (Task Force) is categorizing agency data center populations into two categories:
core and non-core. Core Data Centers are fundamental components of the agency's post consolidation environment. They will serve as primary consolidation points for enterprise IT services allowing the Department/Agency to achieve economies of scale and deliver the lowest possible Cost per Operating System per Hour (COSH). They are required to have sufficient power and cooling to support anticipated operations, appropriate redundancy to meet availability requirements, adequate space for anticipated growth, appropriate levels of physical security, support delivery of IT services for a diverse community of customers over a wide geographic area, and to comply with Federal and industry best practices for energy efficiency and operations.

These categories will encourage agencies to concentrate on optimizing their core centers across total cost of ownership metrics, while striving to reach the government-wide goal of closing 40% of non-core data centers.

In conjunction with the Task Force, GSA developed a tool to help agencies identify and select their core data centers. It defines nine draft criteria that are key attributes for core data centers. Using these criteria, in addition to other agency information, agencies are currently identifying their core data centers in this year's PortfolioStat process:

- Power usage effectiveness (PUE) must be lower than 3.0
- Data center must be metered for use of electricity
- Agency must have sufficient information to calculate a cost of operating system per hour (COSH) score

- Virtualization must be at least 40% - Virtualization is defined as a technology that allows multiple, software-based machines, with different operating systems, to run in isolation, side-by-side, on the same physical machine.
- There must be at least a ratio of 10 servers per full time equivalent (FTE)
- Power capacity must be at least 30 watts per square foot
- Facility utilization must be between 20% and 80% of the data center space
- Data center must meet at least the Tier One standards defined by the Uptime Institute
- Data center must be agency owned, leased or in the cloud

Total Cost of Ownership (TCO) Model

Under the guidance of the FDCCI Task Force, GSA also developed a Total Cost of Ownership (TCO) model to facilitate robust data analysis and optimization planning by agencies. It models alternative consolidation paths, supports development of projected and modeled cost savings figures and funding needs, and enables informed, data driven decision making. The model was first made available to agencies in early 2012 as a planning tool. Agencies were encouraged to use it and vet the business rules governing data normalization and processing. In addition, GAO reviewed the logic and business rules of the model. All 24 CFO Act agencies are now using the TCO model. Furthermore, the TCO Model is being migrated into a cloud-hosted application that agencies can easily access and use.

The primary TCO model's primary capabilities are:

- Aggregates data center costs and calculates the cost of delivering an operating system, whether virtual or physical. This allows agencies to compare data center costs to alternative hosting solutions and provides an overall snapshot of cost models.
- Provides information and analysis for CIOs to make educated, cost-based decisions on what data centers to optimize and consolidate, assess the impact of potential optimization and consolidation decisions, and to determine where to most cost effectively deploy applications across their portfolio.
- Provides an executive level dashboard for agencies to analyze different scenarios to calculate the potential return on consolidation/optimization investments – e.g. how much will increasing virtualization save the agency?

As recommended by commercial and public sector best practice, the TCO Model uses the operating system (OS) as the base commodity for measuring efficiency and cost. It breaks down costs associated with data center ownership to the cost per OS per hour

(COSH) level. Commoditization of data center resources at the OS level allows for direct, apples to apples comparison with other agencies and across agency sub-components, as well as with cloud-based Infrastructure, outsourcing and other infrastructure options. Agencies can make better, more informed consolidation and optimization decisions by using the TCO Model to analyze alternatives and associated projected costs. It enables agencies to weigh specific factors against of series of optimization and consolidation actions which, if taken, should enable improved mission service delivery.

As agencies have gained experience with the tool and its applicability to IT planning, they have requested updates and changes. GSA and the FDCCI Task Force's Configuration Change Control Board evaluate all change requests, and prioritize approved changes. The model has been modified and enhanced over time to reflect these recommendations.

Conclusion

The FDCCI has made significant strides identifying, analyzing and optimizing Federal data centers across government. To date, over 484 data centers have been closed, with another 855 scheduled for closure by the end of FY 13. Data Center consolidation is an important part of broader federal IT reform focused on optimizing investments and resulting operational efficiencies that improve mission results. GSA is providing valuable, practical tools and support to agencies that enable accurate, complete data center inventories and analysis. While there is much to be accomplished in the years ahead, we are assembling a more complete, accurate and transparent inventory of data center assets than has previously existed.

Mr. MICA. Okay, we will catch all of you right now, and I will start off with some questions.

First of all, let's look, Mr. Powner, Mr. VanRoekel. We started out in June of 2012, I guess, actually, in April of 2013 we were told that there were 3,133 data centers. Now we are told it is over 7,000. Kind of a slight miscalculation. And then I think there were a couple gasps from members of the panel, joint bipartisan gasps when you said, Mr. Powner, that the Federal Government really doesn't know what it has. What is going on?

Let's start with Powner.

Mr. POWNER. Well, first of all, the 3100, we did report that at your May field hearing, and GAO found through our audit follow-up, we follow up with each agency, that there were an additional 3,000 centers that were reported.

Mr. MICA. So do you think the next time you come back we will be up to like 10?

Mr. POWNER. Well, we are up to 7,100 now.

Mr. MICA. I mean, there was a collective gasp when you said Government maybe really doesn't know what it has.

Mr. POWNER. And I stand by that statement. I think there are 7100 now. Hopefully, we know what we have, but I wouldn't put money on it.

Mr. MICA. And I think, actually, now, wasn't it you also, I have your little notes here, you said the savings could exceed $5 billion to $6 billion, rather the $3 billion that was projected?

Mr. POWNER. Well, with the PortfolioStat initiative we have agencies reporting to us there is a $2.5 billion number floating around out there. Most agencies reported 2.4, then DOD came in alone and said they could save somewhere between $3 billion and $5 billion. So I think the $5 billion to $6 billion range is very accurate for savings on PortfolioStat.

Mr. MICA. Then VanRoekel, he comes up and says today he is proud to announce the $1.37 billion in savings. That is your new number? Where did you get that?

Mr. VANROEKEL. So, sir, we report quarterly to Congress through a mechanism called the IUIT report. That IUIT report cleared yesterday and was transmitted to Congress.

Mr. MICA. For today? So instead of, where the hell were we here? We were at, this is projected savings were about $300 million by OMB according to a May report, and now you are saying we have jumped a billion?

Mr. VANROEKEL. There are sort of two numbers that we are tracking simultaneously here.

Mr. MICA. Is that from the closure of the 484? It says you have a total plan closure of almost double that, 855. So have you had a sudden lightening expansion.

Mr. VANROEKEL. You are actually looking at two separate tracks of numbers. One number is just data. The number you are quoting with the $300 is just data centers.

Mr. MICA. Okay.

Mr. VANROEKEL. There is a broader set of IT savings which have data center implications.

Mr. MICA. So this is sort of a self-reporting and they are telling you that they have saved money by doing that.

Mr. VANROEKEL. No. We actually track at the investment level through the IUIT report, and I would encourage you to check it you.

Mr. MICA. So it wouldn't be reflected in this. Then this $300 still stands, $300 million savings OMB as of May?

Mr. VANROEKEL. In May, yes. In May, yes.

Mr. MICA. So this is another billion. And where would you attributed that billion coming from?

Mr. VANROEKEL. I am happy to share, with the permission of the Appropriations Committee, who we submit this report to, the report.

Mr. MICA. Some data?

I think it would be good for us to know. If you are making progress and it can be documented, we would like to know about it.

Again, from the consolidation standpoint, we are somewhat still stuck in neutral, Mr. Powner? Actually, it looks like we are not only in neutral; it looks like we have gone in reverse because we actually have found more of these non-core centers than we anticipated. So we are behind the eight ball a bit.

Mr. POWNER. On the data center consolidation, that now has been merged with PortfolioStat, but to be real clear on data center consolidation, there is to be 800 centers closed, more than 800 centers closed by the end of this fiscal year, by September.

Mr. MICA. What happened is we start out, even if we close the 800, that would have been 800 out of 3,100, and now we are looking at 7,100 or more, because we are not sure exactly. So it doesn't appear that we are making progress. If it was 800 of 3,000, that would be somewhat more significant.

Mr. POWNER. Mr. Chairman, I think there are fundamental questions about how many we will ultimately close and what the savings will be, and we agree that we need to optimize what remains, but still, with that large number of closures, there should be associated savings with that.

Mr. MICA. Well, again, it sounds like you have testified, too, that there is even more potential savings, so we would hope that can be, the problem seems to be, VanRoekel has great credentials for his position, coming from the private sector and observing sort of the Federal mess and trying to straighten it out, but we have tried several tools that don't seem to be that effective. We had this data consolidation, whatever the FDCCI, and then we have gone to this Pro whatever it is, and it doesn't appear that these tools are that effective.

Okay, we are developing matrix. You said we are continuing to developing matrix to, again, get a handle on this or to move forward with realizing these savings and consolidation. But is this an evolution of the two or three sort of programs you have already set up? Are they an evolution? Explain what you are doing to get these agencies to maximize the potential for consolidation and savings.

Mr. VANROEKEL. I think the key is every day in the private sector you think about what impact are you driving, what is the result you are trying to affect. It could be selling products; it would be moving the stock price; it could be creating value. And thinking about that impact in working your way back from that is key.

So what we hope for here is definitely cost-savings and closures. That is an ends, not a means. And the means to get to that is thinking about what applications am I running; how many email systems do I have; what kind of things am I deploying; what are the characteristics of the outcome I want to drive. So if you ask any CEO their advice, they will say measure what you care about, and what I care about is the optimization.

Mr. MICA. That is the end results in providing the IT services, but when you have, okay, let's go back to Powner is telling me, what did you testify, server use is 5 to 10 percent?

Mr. POWNER. Well, when we started the data center consolidation initiative, it was because average server utilization across the Federal Government was 5 to 15 percent. So that is a lot of unused capacity.

Mr. MICA. Exactly. Exactly. That would be one of the sort of fundamental things I have. Setting up servers, the energy they use, the space they use, the inefficiency of 5. Where are we now? VanRoekel, it seems to me like you would look at that to begin with. I mean, getting the mission done is good, but you have people, they can certainly do the mission with lots of servers and all of these centers, but somehow the core expense and the consolidation efficiency goes back to the equipment, the hardware and the utilization of software that we aren't—Powner, do you continue to monitor this? Where are we at now with, say, the utilization of servers?

Mr. POWNER. We are not monitoring that now. We were monitoring that at one time because that was stated in agency consolidation plans, which we don't currently have visibility into that. I think a key question is this: The core centers that remain, so we are going to close several non-core centers. The core centers that remain, where are we at on utilization on those. That ought to be a key metric.

I agree with Steve, and there are a lot of metrics on power usage, efficiency, and those types of things, but if we are attempting to solve a problem of low server utilization, the core ones that remain, did we fix the problem. And we are ready to go out and measure that once those core centers are up.

Mr. MICA. But, to me, that would be sort of fundamental. You are probably not going to do away with the core centers, but better utilization.

Mr. POWNER. Absolutely.

Mr. MICA. And if you are not doing that and you want to accomplish a mission, you look at the alternative. If it isn't using that core, going to cloud or some other more efficient thing. But the problem is you go back to the matrix. We have had a couple of plans to kind of get this thing going and to try to move the consolidation, better utilization of the assets that we have, but that hasn't, apparently, worked.

Now, we will probably be here in six months and haul everybody back, and we may get more discovery of non-core data centers and maybe a few more of those closed, but it doesn't appear like we are really getting a good handle on a means to make this happen.

And then you have McClure here, who comes from GSA. McClure, you guys haven't set a very good example in your own op-

erations. You have closed only one, less than one percent. You have 115 non-core data centers. What about yourself not operation? Anything to say on that?

Mr. MCCLURE. Well, I think that data that you are looking at was the second quarter reporting from GSA. Since then there has been a lot of movement. GSA owns, primarily, non-core data centers, small data centers, and we were in the middle of collecting the date when that second quarter——

Mr. MICA. So what is the good news?

Mr. MCCLURE. Well, the good news is we expect to close 75 of our 116 non-core data centers.

Mr. MICA. Expect to, but how many?

Mr. MCCLURE. Thirty-eight will be done by the end of fiscal year 2013; another 37 in fiscal year 2014.

Mr. MICA. So we will run from one to add 37 more is what you are telling us now.

Okay. And, again, you have cited some of the things you are trying to do. Let me look at my notes here. You ever listen to WTOP in the morning? They have all these guys advertising that they can do this. That is the lighter side. I listen to WTOP in the morning and I swear they have 10 ads, by the time I am through shaving, on who can consolidate IT centers and how they do such a great job. It doesn't sound like anyone is listening, though.

But you are still developing tools to evaluate all of this and you have put some tool, the data center optimization. Explain that and how it works.

Mr. MCCLURE. Well, I think it gets at the heart of what Dave was saying and what Steve was saying, and what you are saying, Mr. Chairman. We have to have a data-driven decision-making process and transparency into that data. The GSA, our office has created a total cost of ownership model which would provide data into a lot of these areas that we are have been talking about this morning; power capacity, utilization.

Mr. MICA. But you are laying out sort of the things that you could do; it is not things that you should or must do?

Mr. MCCLURE. No, no, this model exists. It is in the hands of all the agencies. It is an optimization planning tool that they can look at.

Mr. MICA. Again, part of the solution would be to, and I have gotten to this. I have run out of time, but is to make certain, maybe VanRoekel has the tools to do this. Maybe from a procurement standpoint you would dictate or mandate that such-and-such has to be achieved. VanRoekel has to go in and sort of force them. I have always said we give you budget authority, and they aren't performing and you just, you know, you have to have some teeth in the process to get people to do things.

But I will leave it at that. I will come back. I want to give others an opportunity.

Mr. Pocan.

Mr. POCAN. Thank you, Mr. Chairman.

This is a question maybe for Mr. McClure. According to the GSA website, the goals of the FedRAMP program include increasing the confidence and security of cloud solutions and security assess-

ments. Under the process, cloud service providers must adhere to certain security requirements and undergo an independent audit.

I am wondering a little bit about the confidence that agencies like DHS and DOD and NSA can have with information that is stored on the cloud, that it won't be compromised in some way.

Mr. MCCLURE. It is a great question. I think if we follow the baseline security requirements that we have established in FedRAMP and we do the independent certifications by these third-party assessment organizations that know how to assess cloud security, I think we will have much, much greater confidence that our data at all trust levels is really secure. I think FedRAMP is trying to instill in the Government a trust level that has not been there before, and to date we are finding it really does improve the confidence and trust of both the agencies and the providers that they are doing that.

Mr. POCAN. And given all the controversy about cyber attacks and things, what confidence do we have that, as hackers are constantly revising how they are finding ways in, how confident are you that that FedRAMP process will provide enough flexibility that we can keep up with any evolving schemes or new technologies to try to break through?

Mr. MCCLURE. I think it will do it in two ways: number one, we are always going to be changing the FedRAMP security program. As the NIST security guidelines change, we incorporate that into the FedRAMP baseline, so it is always going to be up to speed with what NIST is recommending the Federal agencies do.

Secondly, we are putting a lot of stock in the ability of these agencies to do continuous monitoring so that they have a real-time operational view of their security posture of themselves and their cloud providers. That is the best defense we can put in place, is having very robust, continuous monitoring.

Mr. POCAN. And these audits, who is going to do the audits and what do they typically consist of?

Mr. MCCLURE. The audits that are done for FedRAMP certification are done by independent assessment organizations either off a list that we have put together, where companies have passed our accreditation that they actually have the capability to do the cloud assessments, or independent ones that exist in the marketplace. Based upon those audits, we can then review that in my program management office and determine whether there are any follow-up questions. Or the agencies can use them and feel much more confident that the audit has been done consistently, according to baseline standards, and is repeatable, can be reused across Government.

Mr. POCAN. And the timeline for FedRAMP to be fully operational?

Mr. MCCLURE. It is moving into fully operational status now. We have run it for a year in what we call an interim operating capability. We didn't want to roll this out Government-wide until, if you pardon the expression, kick the tires, so we wanted to make sure this worked. We wanted an opportunity to refine it for success, and we think we are ready now.

Mr. POCAN. Thank you, Mr. Chairman. I yield back the remainder of my time.

Mr. MICA. I thank the gentleman.

Mr. Meadows, the gentleman from North Carolina.

Mr. MEADOWS. Thank you. I appreciate the insight. I must say that I am troubled by some of the things that I am hearing here.

Mr. McClure, let me start with you. So, to date, you have closed one data center, is that correct?

Mr. MCCLURE. I will check as of today. I don't know if it is one or more, but there are several that we are nearing the close.

Mr. MEADOWS. My data says that you have closed one in three years. And you are going to now, according to your testimony, you are going to close 37 in two months? What happened to go from one in three years to 37 in the next two months? How do you plan to accomplish that?

Mr. MCCLURE. Well, I don't operationally own the task myself, the CIO of GSA does.

Mr. MEADOWS. So if it doesn't happen you can blame them?

Mr. MCCLURE. I am not blaming, I am just stating a matter of fact.

Mr. MEADOWS. Well, we need to know where does the buck stop. Does it stop with you or does it stop with GAO?

Mr. MCCLURE. It should stop with the head of the agency, as with all these matters.

Mr. MEADOWS. So it stops with you.

Mr. MCCLURE. I am not the head of the agency; I am the head of an office that provides the tools that we talked about to help get this job done.

Mr. MEADOWS. So if we bring you back in two months and 37 of them are not shut down, who should we hold accountable?

Mr. MCCLURE. Well, the CIO holds responsibility in each agency for doing the data center consolidation work and for estimating plan closures, so the CIO owns the issue. The head of the agency is ultimately responsible. So those are the two individuals at GSA that have their eyeballs on the situation.

Mr. MEADOWS. So what happens if they don't make the 37?

Mr. MCCLURE. I think you should ask for an explanation.

Mr. MEADOWS. So Ms. Coleman would need to come here and say why she couldn't get it done?

Mr. MCCLURE. I would recommend that, yes.

Mr. MEADOWS. All right.

Mr. MCCLURE. I think that would be true, by the way, across the board for every agency. A lot of the responsibility here lies at the CIO and head of the agency level. So the same conversation could be repeated across multiple agencies.

Mr. MEADOWS. So essentially we have a whole bunch of people that come and give testimony before Congress, but really don't have the responsibility for implementing those things. So we have hearing after hearing after hearing and nothing gets done? Is that what happens?

I mean, I am at a loss on how one got closed. I think you have three core centers, 115 non-core centers, and we have one closure in the last three years, and now, all of a sudden, we are going to ramp up. Why is that? I mean, who made that decision to ramp up and how is that going to happen?

Mr. MCCLURE. Well, I think the thing to remember is that, again, we had a definition change. That is the reason why the number of data center number changes.

Mr. MEADOWS. Okay, but we have heard from testimony, I think over here, that actually the number of data centers have increased. But they really haven't, so they have stayed static.

I think OMB, according to your briefing, you knew as far back as June of 2012 that we actually had 6700 centers, and that has grown to 7100 now, is that correct?

Mr. VANROEKEL. Sir, I actually evolved and put more rigor behind the definition to expand the definition.

Mr. MEADOWS. Of what a data center is?

Mr. VANROEKEL. Of what a data center is. What I didn't want to do is have Federal agencies either splitting up big ones and putting them in small rooms or hiding computing resources, because you add up those small ones, you are going to get as much as a big one, and I want to track all of them. Our prior definition only tracked the very large. If we change the definition——

Mr. MEADOWS. So your prior definition of large ones——

Mr. VANROEKEL. Was over 500 square feet, I believe.

Mr. MEADOWS. Okay. And that was 6700?

Mr. VANROEKEL. Was the 3,000.

Mr. MEADOWS. Is the 3,000 number that they originally reported.

Mr. VANROEKEL. So I came in and said I don't want anything hidden, I don't want resources in dark corners.

Mr. MEADOWS. Okay, that is reasonable.

Mr. VANROEKEL. I expanded the definition to say we are going to go into the small ones too. That contributed, then, to the——

Mr. MEADOWS. Okay. So what you are saying is that expansion is really a function of changing the criteria of what we call a data center.

Mr. VANROEKEL. To be more comprehensive and derive better inventory.

Mr. MEADOWS. All right, so let me pick up on one other line of questioning, then, because I think what we are saying is our server capacity right now, according to Mr. Powner, we are operating at 5 to 15 percent. Would you agree with that?

Mr. VANROEKEL. I don't have raw data, but that is probably an industry——

Mr. MEADOWS. So why are we continuing to buy new servers, then? And I am not talking about replacing existing servers. We are actually purchasing additional servers. So why are we doing that if we have excess capacity?

Mr. VANROEKEL. The way that technology grew up and the way that we built data centers very much follows what the private sector did, which it was——

Mr. MEADOWS. Well, if I did this in the private sector I would go out of business.

Mr. VANROEKEL. Until about mid-2000, the private sector did this.

Mr. MEADOWS. I understand.

Mr. VANROEKEL. Server utilization for corporate customers—I was part of the leadership to the server division of Microsoft—was 7 percent utilization prior to this new technology coming onboard

called virtualization that allows you to put more stuff on physical hardware. You need new hardware to run that technology. There is new investment.

Mr. MEADOWS. But that is what I am saying, this is not replacement of existing servers; these are actually additional servers, according to the data that I have.

Is that correct, Mr. Powner?

Mr. POWNER. The increased inventory is existing, what currently exists at these agencies, where we are discovering more based on the new definition that Steve laid out. So——

Mr. MEADOWS. So this is just a definitional change, it is not an actual increase in the number? Are you all sure about that?

Mr. POWNER. I think it is both. I think it is both. Here is what happened. Initially we started off, the definition was 500 square feet or larger. Then we expanded the definition and things were smaller. Steve did the absolute right thing because there were a lot of opportunities to save by including these additional things. So the definitional thing resulted in an uptick.

But I think over time, based on our audit work, because we go in and ask agencies what their inventories are, we see these inventories continuing to grow over time. So it is twofold, it is the increase, it is the change in definition, and it is also they are discovering more what they have.

Mr. MEADOWS. All right. So let me go back and pick up on the national security. If we have 7100 data centers, from a security standpoint how do we manage that security aspect from the standpoint of cybersecurity, a number of things in terms of attack? Because it seems like it would be the more concentrated it is, the easier it is to provide a higher level of security. So, as we grow that out, is there a matrix right now that you are looking at to try to say, well, optimum efficiency would be to get down to 2,000 servers? I mean, do you have a number?

Mr. VANROEKEL. It is less about the raw, the number of data centers, of course, is important, as we are talking about today. Cybersecurity related to data centers is just a little bit different in the way you think about that. And the way we build our cyber capabilities is grounded in FISMA, the Federal Information Security Management Act, and we use a process called CyberStat, much like PortfolioStat, that tracks key metrics, and effectively what you want to make sure you are doing is that when traffic comes and goes from these centers, that they are going through these trusted Internet connections and that we have capabilities there——

Mr. MEADOWS. But fewer data centers would make that an easier task or not?

Mr. VANROEKEL. I think it would make it an easier task, definitely, and that is a byproduct of——

Mr. MEADOWS. So where do we need to be? If you had control over all the other agencies and you are the guy that is in charge and ultimately the buck stopped with you, how many data centers do we end up? What would you do if you were a private sector guy trying to make money here? What would you do?

Mr. VANROEKEL. Fewer is better and optimized is better.

Mr. MEADOWS. How many fewer?

Mr. VANROEKEL. It would depend on the size of the agency, the mission of the agency, what is the relationship of that. Homeland Security, for example, has defined three core data centers.

Mr. MEADOWS. Sure.

Mr. VANROEKEL. I think that is a good target to think about. And these are highly optimized, they follow all the guidelines that we have put forth in this approach to say where we need to go. I can't extrapolate for the whole of Government.

Mr. MEADOWS. And that is fine, but so we don't just have hearing after hearing, I would ask if you would go ahead and try to put together what the plan is so we know whether—one of the criticisms of your agency, and I understand this is a new role, is that you are not measuring, that you are not effectively measuring, and I think that that can be maybe accurate in some ways and inaccurate in others. I will give you that. What I would love to see is how do we know whether we are being successful or not, so really would love for you to follow up on that, have your staff follow up on that.

The second part of this, and this is probably as critical, what can we do as Congress to give a real incentive for us to save money. I have hearing after hearing where we save billions and billions of dollars, but yet we ask for more and more money. So what I would love to do is to find a real way where you say, Mr. Meadows, if we did this, if you offered us this, we could assure that we could get $50 billion in savings or over the life, or whatever it is.

But I am talking about real incentives where, hopefully in a bipartisan way, we can come up with something that gives you incentive. I would love to hear that from each one of you, not in terms of answering that question, but as a follow-up, if you would submit that to us.

Thank you so much. I yield back, Mr. Chairman.

Mr. MICA. I thank the gentleman from North Carolina and recognize our ranking member, Mr. Connolly now.

Mr. CONNOLLY. Thank you, Mr. Chairman.

Forgive me, Mr. VanRoekel and Mr. McClure, for not being here for your testimony, but I have been trying to catch up. I had to move an amendment on the Floor and the Republican manager accepted my amendment. So I don't know whether it means it was just awful and brilliant or whether apparently I wrote an amendment that was so weak that even for them it was acceptable. I don't know, but I will take the gift.

Mr. Powner, if I understood your testimony correctly, you, inter alia, said we seem to be sliding backwards in terms of certain metrics with respect to, for example, data center and Dashboard, is that correct?

Mr. POWNER. I think in terms of the Dashboard, yes, on the data centers what we want to do is we want to track savings. I think we want to know what the inventory is, transparency on what the inventory is, what the savings are, and then how we optimize what remains. And transparency around that is key.

Mr. CONNOLLY. Okay. I also thought I heard you say there is some concern that the Government doesn't fully know what it has when it comes to data centers.

Mr. POWNER. Well, when we see the inventories growing as they have over time, you can just take the snapshots in time; it keeps growing, so there is still a concern have we still captured everything.

Mr. CONNOLLY. And I also thought I heard you say that you thought the FATAR legislation passed out of this committee and passed on the floor of the House would be actually helpful to the Government in trying to get its arms around this subject matter.

Mr. POWNER. On data center consolidation optimization, it would codify that in law, clearly.

Mr. CONNOLLY. Mr. VanRoekel, your reaction to those elements of Mr. Powner's testimony?

Mr. VANROEKEL. As I mentioned earlier, I do agree that there is a level at which the inventory management, when you cast a net across the Federal Government, there will be things you probably aren't finding just given the sheer size. I think our rigor around the definition and modifying that definition over time to capture more of what is out there has been the driving force behind the number increasing, less about sort of inventory management. But I do think there will be edge cases where we will have more come up in different cases.

Mr. CONNOLLY. Can I interrupt you there? I take that point, but if you look at GAO's report agency-by-agency how you are doing in data center consolidation even before the announcement of an additional 4,000, it is pretty slim pickings for most Federal agencies.

Mr. VANROEKEL. If you visit a data center and understand how a data center works, it is not literally walk up and pull the plug and say I am going to shut this thing down. And the incentive structure you want to establish here needs to be one where you drive to optimization, because if you lay a metric out and say close data centers, cut them by 30 percent, cut them by 40 percent off just a denominator of inventory, what you will have happen is Federal agencies, in many cases, will literally take a forklift, pick up small data centers, move them to a larger room and plug them back in.

Mr. CONNOLLY. And that is called compliance.

Mr. VANROEKEL. And that is called compliance. So you have two next to each other and they remove the wall between them, thus reducing that by 50 percent. That doesn't get where we want to go, which is to get that utilization up, get the optimization up, get the service out of that data center to increase in such a way that you drive better outcomes for the mission of that agency and for the American people.

So the incentive structure has to match to the measurement in a way that I think needs to drive the behavior we want to see and the outcomes we want to drive. So the uncertain budget environment we have been in for a while, CIO authorities, which the FATAR bill looks at that, and other driving factors contribute to this phenomenon of not being able to just shut one off.

Mr. CONNOLLY. I do want to be clear. The FATAR legislation is not sort of a Luddite approached to the subject matter; it actually does require tracking and it does have other measurements about utilization and so forth that are incorporated into the concept. So I think we kind of took your point. But I would also say to you that

the metrics of the number of data centers and the need to reduce them came out of this Administration. I mean, that wasn't something that ended up here; that was something that came out of the White House.

Mr. VANROEKEL. And we still stand behind that direction.

Mr. CONNOLLY. We kind of hope you do. We take your point, and we are not always good about nuance, but we are going to try to be responsive on a nuance way, the bottom line is efficiency, utilization. But we have to have some metric that says we have too many of these things, and that alone tells us we are inefficient; that tells us, you know, sort of there's no place like home syndrome: I know Steve has a better one, but kind of like ours right here, and we are not going to give it up willingly, and we are going to use every bureaucratic trick in the book to protect and preserve it, irrespective of utilization. Utilization, we can have Harry and Shirley go there twice a day instead of once a day and get up to utilization; it doesn't really get to what we are trying to get at.

And I was saying to the chairman, he shares my view that I think the fact that you are now also at OMB gives us some hope that from a management point of view we can perhaps persuade people that there is a better way of doing this and it is win, win, win. We can save on energy, we can save on budgets, especially in a time of contracting budgets, and we can make ourselves more effective. So we want to be supportive of that, but we are frustrated that the numbers are not particularly felicitous. And I hope you can understand that, from our point of view, that is to say.

Mr. VANROEKEL. Yes, I can definitely understand that.

Mr. CONNOLLY. Okay. The IT Dashboard, the Department of Defense reports zero investments with significant concerns and has not updated the status of most of its investment over two years, and that more TechStat reviews obviously need to occur, as Mr. Powner said in his report. What are we doing about that? I mean, that is actually, to me, astounding. Here is the biggest expenditure of Federal dollars, here is the biggest investor of Federal dollars, here is the biggest client we have, from your point of view, and it hasn't even essentially updated its Dashboard in two years. Huh. I guess we have been busy doing other things.

Mr. VANROEKEL. I think it speaks to a couple aspects. One is we don't, in OMB, in my office, track the self-reported status as the key indicator of performance on investments. It is a fool's errand to track a self-reporter. You would never have a contractor self-report their results or things like that. So we go deeper than that and look at how often do they change schedules; where are they on budget, are they hitting budget; what is their time to delivery on services, all of these kinds of things.

I have actually added features to the IT Dashboard in the last couple years that give me indications when agencies go in and do re-baselines, meaning they have changed their data in some fundamental way. Those, to me, are the red flags you want to look at. And where we will lift up and say there is something going on there, where self-assessment will never do that for you. And I agree that it is laughable, to some degree, on DOD not reporting any core investments, but we know; we track and we know where those are.

The second part of it is CIO authorities. And I think looking at the authority of the CIO, the person whose picture is next to all those investments is Terry Takai. Terry Takai has very little influence over most of the investments that you are looking at on that Dashboard and has very much an inability—you know, she is reporting what she gets from the self-reported aspects of the people out in the periphery, and I think it speaks to a larger theme of something we need to look at in Government around what is the authority of the CIO or whose picture should be next to that.

Mr. CONNOLLY. Well, funny you should bring up that subject, Mr. VanRoekel. FATAR addresses that issue in terms of the streamlining of CIOs in Federal agencies and the infusion of authority, responsibility, accountability in a CIO, a principal CIO for each of the 26 major agencies. And I think Mr. Powner, in previous testimony, has highlighted that as well. So I commend the bill again to you, because I think it tries to move us in that direction without a heavy hand. But it is trying to inculcate more flexibility for a chief CIO. It doesn't abolish all other CIOs, but I would commend it to you that it is designed, again, to address the very thing you are talking about.

Now, DOD, because of jurisdictional issues, is not directly addressed, but sooner or later it will be, and we will be glad to work with the Administration to make that happen.

Some questions have come up recently about energy savings performance contracts, and let me ask what is the role of OMB in approving such projects.

Mr. VANROEKEL. OMB doesn't, accept for interpretation of policy or matters where procurements reach a certain threshold where we have a review board process that is part of our normal Office of Federal Procurement Policy work, review those and provide counsel to agencies; it is the agency's decision to go forward and the Procurement Office to go forward with the procurement.

Mr. CONNOLLY. So OMB is not going to play any kind of direct role in the awarding of such contracts, the approval of such contracts, the extension of such contracts, or even just conceptually the general approbation of or disapproval of those as a tool.

Mr. VANROEKEL. We provide guidance in that context.

Mr. CONNOLLY. Okay. I thank you.

And, Mr. McClure, when we had our field hearing there were concerns raised about GSA's performance with respect to data center consolidation. You were not there to answer those questions, so I want to give you, as my last question before we have to vote, an opportunity. How is it going? I think after the hearing you did have some announcements, and that was good. It would have been nice to have them at the hearing. But the concern is that this is a sustained trajectory, not just a let's please them and give them something to report, and it kind of looked like the latter more than the former. So reassure us that that is not true, please.

Mr. MCCLURE. Well, I do want to reassure you. I think it might have the appearance of that, but, as I was explaining while you were gone, there was a lot of data collection going on that had not ended by the second quarter reporting period, which is the data that the committee had at that time. So, as a result, shortly after the hearing, with updated numbers, our situation looks much bet-

ter; 38 planned closures by the end of fiscal year 2013 and an additional 37 in fiscal year 2014.

Mr. CONNOLLY. Can I interrupt you there, Mr. McClure, just to satisfy myself? The chairman was reminding me the report we had was you have done one. Now you have 37 more in the pipeline, but how could we have taken so long to just have one?

Mr. MCCLURE. Well, I will give you some explanation that revolves around what Steve just said, and that is that CIOs in the Federal Government often don't have complete control over all data centers in that department or agency. That was the case until May of this year, June of this year, in which Administrator Tangherlini consolidated CIO authority under a single CIO. So the ability to collect this data I think has been greatly enhanced with that kind of authority being vested in the CIO.

Mr. CONNOLLY. So, in other words, for example, had the FATAR bill been law, we might have been able to have happier numbers much sooner.

Mr. MCCLURE. I think it can help, because it has helped there.

Mr. CONNOLLY. Stop right there; you are doing fine.

[Laughter.]

Mr. CONNOLLY. Okay, we have to go vote. This is part of a dialogue. I certainly appreciate you being here. I hope we have conveyed, through our frustrations we share on a bipartisan basis. We also, on a bipartisan basis, want to be partners. We want to help. This is an important part of Government that doesn't get sufficient attention. But in terms of our future, the investments we make in technology are going to drive everything, not just something. And from megadata evaluation to cybersecurity attacks to wonderful ability to do great things more efficiently, you all have the keys in your hands to help us make that happen and we want you to be successful.

So we want to try to help create an environment for success, so I hope you look at it in that spirit. Congress has an oversight role and we have to throw the flag down when we think something has gone wrong, but that is not the end game for us. And I can say my partner here, the chairman, Mr. Mica, has gone out of his way to try to create this subcommittee as a forum to be helpful and to be useful. So we look forward to working with you and thank you so much for being here today.

Thank you, Mr. Chairman, for the hearing.

Mr. MICA. Thank you, Mr. Connolly.

I will re-echo his comments that we are trying to find some constructive means of helping you move forward, both GSA has an important role, certainly OMB, and we want to talk some more, Mr. VanRoekel. I want to also see if the legislation we have pending provides you with the tools. You need some teeth. You are a nice guy. You came from the private sector and mission-oriented.

I love all that, but the difference is in the private sector the people that are involved are business people who are bottom-line people; they are doing everything they can to bring the cost down, the efficiencies, maximize the assets that they have. Here you have a Federal agency; it is just more manna from the Treasury and they don't have that same incentive. But we are going to figure out a way to give you all the tools you need to help us get the job done.

And thanks, Mr. Powner. Keep us posted as you reveal more of the findings that cause a bipartisan gasp in any panel of Congress like you did today.

So, with that, I am going to ask that we leave the record open for two weeks. We have additional questions we didn't get to. We want to have those answered in the record. So, without objection, so ordered.

There being no further business before the Government Operations Subcommittee, this hearing is adjourned. Thank you.

[Whereupon, at 10:53 a.m., the subcommittee was adjourned.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD

"Data Centers and the Cloud, Part II: The Federal Government's Take on Optimizing New Information Technologies Opportunities to Save Taxpayers Money"

Questions for the Record

FedRAMP (the Federal Risk and Authorization Management Program) is a standardized approach to cloud security certification that will save the government money, time, and staff by eliminating redundant individual agency security assessments. GSA claims it will save an estimated $200,000 per authorization. FedRAMP is a critical part of OMB cloud-first policy. Yet, we continue to hear complaints from the agencies and industry about the program's slow progress.

The Committee is aware that, as of July 2013, eight cloud services providers are now compliant with FedRAMP requirements. Five cloud providers have been granted government-wide provisional authority, including AT&T, Autonomic Resources, CGI Federal, Hewlett-Packard and Lockheed Martin. Three other cloud providers have been granted agency Authority to Operate, including Amazon Web Services' GovCloud and US East/West offerings, each receiving authorization by the Health and Human Services Department. The Agriculture Department's National Information Technology Center (secure government cloud provider) has been granted an authority to operate by the USDA Office of the CIO.

The Committee continues to hear complaints from the agencies and industry about FedRAMP's slow progress. In fact, the program currently stands at just eight cloud services providers including the ones granted by individual agencies. Mr. VanRoekel stated in his response to the QFR following OGRs full committee's 1/23 hearing--

> **"The FedRAMP program office at GSA anticipates that additional Provisional Authorizations will be forthcoming with continued authorizations during FY 2013."**

Q1: What is the current status of FedRAMP and how many cloud services providers do you anticipate to have under the government-wide FedRAMP by the end of FY2013 and FY2014?

GSA Response:

The FedRAMP Program Management Office (PMO) is currently working with ten different cloud services through the provisional authorization process with the FedRAMP Joint Authorization Board (JAB) while also maintaining the continuous monitoring programs for the five provisionally authorized cloud services. The FedRAMP PMO anticipates capacity to increase over the course of the next year to enable processing of about fifteen cloud services while maintaining the continuous monitoring activities of those services provisionally

authorized. Additionally, the FedRAMP PMO assists agencies across the Government, like the U.S. Department of Health and Human Services and U.S. Department of Agriculture, through their own security authorization processes to ensure the cloud services they use meet the FedRAMP requirements.

As the June 2014 deadline approaches for agencies to comply with FedRAMP, the FedRAMP PMO anticipates an increase in agency authorizations along with the JAB provisional authorizations that meet the FedRAMP requirements. The FedRAMP PMO is assisting the Office of Management and Budget (OMB) to verify agency compliance through PortfolioStat reporting and reviews. Additionally, the FedRAMP PMO continues outreach to Federal agencies to assist with leveraging the current provisional authorizations.

The FedRAMP PMO anticipates having another three services provisionally authorized by the JAB through the end of the FY 2013, for a total of eight services through the JAB. Additionally, the FedRAMP PMO anticipates having another twelve provisional authorizations by the end of 2014, for a total of twenty services through the JAB.

Q2: Do you believe the FedRAMP process will deliver the cost savings predicted?

GSA Response:

Yes. Preliminary results from agencies leveraging FedRAMP authorizations show that agencies are attaining cost avoidance of more than $200,000 per authorization leveraged.

The System for Award Management (SAM) is an E-Gov initiative aims to integrate 10 different legacy acquisition systems into a single shared system - streamlining processes, eliminating redundant data, and saving taxpayer money. Late last fiscal year (9/2012), the initial launch of this system failed. The Committee is aware that OMB and GSA (SAM's program management organization) has since held TechStat reviews and restructured the program.

Q3: Please provide a short chronology (month and year) outlining the initiative's inception, deployment, and efforts made by the new leadership;

GSA Response:

System for Award Management (SAM)
High Level Chronology
(as provided in July 2013 to the House Committee on Government Oversight and Reform)

Jul 29, 2012	SAM Go-live - Early challenges in system stability
Aug 13, 2012	First day SAM was operational continuously for 24 hours for reps & certs (legacy Online Representations and Certifications Application (ORCA)) and registrations (legacy Central Contractor Registration (CCR) database /Federal Agency Registration (FedReg) database)

Aug 21, 2012	Department of Defense (DoD) issues class action deviation for vendor registration in SAM in order to issue awards
Oct 22, 2012	Administrator Tangherlini announces change in management of SAM/Integrated Award Environment (IAE) to a Federal Acquisition Service (FAS)/ Office of Chief Information Officer (CIO) partnership
Nov 21, 2012	Exclusions functionality (Excluded Parties List System (EPLS)) operational in SAM (Legacy contract support ended January 2013) - Early stability challenges with search features
Nov 27-Dec 10	GSA re-worked SAM search functionality and stabilized operations
Dec 12, 2012	DoD ends Class Action Deviation – SAM
January 2013	GSA initiated the analysis of alternatives to establish the long-term strategy for the IAE portfolio modernization
Mar 8, 2013	Security Vulnerability detected – patch applied immediately, vulnerable users contacted, at-risk population offered with credit monitoring. GSA re-worked the SAM security framework over the coming weeks for permanent resolution
May 23, 2013	Draft alternatives analysis presented to agency stakeholders and OMB concurrence received
June 26, 2013	608 notification letter sent to the Subcommittee on Financial Services and General Government Committee on Appropriations and the House and Senate Committees on Appropriations notifying change in management structure and funding sources supporting the IAE program
Jul 12, 2013	Launch of redesigned Federal Service Desk website
Systems Releases	Scheduled Systems releases December 2012 and January, February, April, May, June, and July of 2013 – corrected over 4,000 defects and usability issues, and incorporating Federal policy requirements and improved functionality.
Outreach/Training	Hosted six live public webinars for approximately 5,000 attendees regarding: Migrating from CCR to SAM for companies, Grantee Users of SAM, and SAM for Government Users

Q4: Please provide estimated dollars spent on SAM thus far and the current estimate for the planned approach;

GSA Response:

Estimated dollars spent on SAM thus far: As GSA works to stabilize SAM from its initial July 2012 launch, continued consolidation of systems is frozen and key processes remain within legacy applications. The current SAM application contains functionality of the three legacy systems, CCR, ORCA, and EPLS, and has cost $53 million to develop and maintain from its inception in FY 2010 through June 30, 2013.

Estimated cost for planned approach: GSA met with OMB at a TechStat and did work to establish a path forward. Once the final sequencing of milestones has been established, coupled with acquisition strategies, the long-term estimated costs of the overall program will be better understood. GSA feels confident that the overall cost of the program, as well as our approach moving forward, will offer the best overall value to the taxpayers. Our intention is that the proposed approach moving forward will lower the life-cycle costs of the program as compared to the costs incurred for simply operating the existing legacy systems indefinitely.

Q5: The Committee understands that the GSA CIO was not involved in the SAM program until after OMB held a TechStat and the program was reorganized. Please explain why the CIO was not involved in the development of a critical IT system that is used by ALL agencies. Please provide the current status, including program management organization structure and the names of the individuals responsible for the success of the program going forward.

GSA Response:

When the SAM system was launched and the program flaws became evident, it was apparent that much greater IT leadership and CIO involvement was necessary, in addition to the ACE governance. In October 2012, the GSA Administrator transferred the technical oversight of the SAM/IAE program to GSA's CIO so that the technical flaws in the system could be identified and rectified, the system could be stabilized, and a long-term strategy could be established for the IAE.

Building on the lessons learned from the SAM/IAE program, the GSA Administrator also conducted a top to bottom review of the GSA IT organization, and empowered the GSA CIO to undertake a consolidation program, bringing together all IT programs, projects and investments, under the direct oversight of the GSA CIO. This consolidation process is well underway, and several teams are working to bring together the personnel, processes, resources, contracts, and budgets into one, cohesive IT organization. Under this new model, the GSA CIO will be directly accountable and empowered to oversee all GSA IT investments, projects, and initiatives.

Software Acquisition. The Federal Government uses a huge number of copies of COTS software. When people move or change their computers, some of these licenses become dormant and become what is often called 'shelf-ware.' Some say we have numerous such shelf-wares licenses, but we do not know for sure because agencies do not have a comprehensive inventory of their IT assets; despite the statutory requirement under the Clinger-Cohen Act for IT inventory. Moreover, even if an agency wants to utilize such shelf-ware or excess software licenses, they are often prohibited under the user-license agreement from transferring it to the other federal agencies. The Committee is aware that

the UK Government is structuring its software license agreements so that the entire UK Government is one user.

Q6: In your response to the QFR following OGR full committee's 1/23 hearing, you indicated--

> **"OMB has followed the work of the UK closely in regards to COTS software purchases and the move to a single user model. The approach is quite interesting and there are a number of initiatives that are helping the UK better purchase at scale and reduce the number of duplicative contracts and licenses."**

Please share your findings regarding possible U.S. adoption of the successful UK approach.

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q7: How do you think the government can better manage its software user licenses so that there are no software licenses we purchase but do not use?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Cloud First Initiatives. As part of the administration's cloud-first policy, each agency is required to identify at least three legacy systems that could be replaced by cloud solutions.

Q8: Please provide the list and status of the major cloud migration initiatives in the Federal Government.

GSA Response:

Please see answer provided by the Office of Management and Budget.

PortfolioStat. Initiated in March, 2012, the OMB PortfolioStat initiative is a tool that agencies use to make decisions on eliminating duplication and moving to shared solutions in order to maximize the return on IT investments across the enterprise. Through the PortfolioStat process, agencies are expected to develop a clearer picture of where duplication exists across their respective bureaus and components. This analysis should inform the budget process and help agency Deputy Secretaries eliminate waste and duplication within the IT portfolio. OMB projects PortfolioStat will save $2.5B.

Q9: How many PortfolioStats have been held and with which agencies?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q10: Why was the previous PortfolioStat savings goal of $2.5B not revised to reflect the merger of FDCCI into PortfolioStat? Considering the $3B savings goal for FDCCI, shouldn't the new combined savings be $5.5B?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q11: We've heard from GAO today that CIO authority is an issue with implementing PortfolioStat. What actions are you taking to address CIO authority?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q12: Will data center consolidation lose focus if it is merged under PortfolioStat?

GSA Response:

Please see answer provided by the Office of Management and Budget.

TechStat Accountability Sessions (TechStats), which are evidence-based reviews of each investment aimed at turning around or stopping troubled investments. In December 2010, OMB stated that these sessions resulted in $3 billion in reduced life-cycle costs and subsequently incorporated the TechStat model into its 25-point plan for reforming Federal IT management.

OMB is holding less number of TechStats and overly relying on each agency. OMB held 59 TechStats in 2010, 5 in 2011, and at least 6 in 2012. GAO reported that OMB-led TechStats represented only 18.5% of the troubled investments. For the 4 selected agencies GAO reviewed, the number of TechStats represented 33% of the investments that have a medium or high-risk rating.

Q13: GAO reported that OMB-led TechStats represented only 18.5% of the troubled investments. How many OMB-led TechStat sessions were held in 2012 and 2013? Shouldn't 100% of the troubled investments be reviewed?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q14: It is the Committee's understanding that TechStat was created, in part, because agency CIOs were not doing appropriate reviews of their IT investments. Yet 3 years later

OMB seems to be returning back to relying upon agency CIOs. Will OMB stay engaged in TechStats?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q15: What programs are on your TechStat radar screen? Specifically, what programs have you recently reviewed and what programs are on your schedule to review? How many TechStats does OMB plan to hold in FY2013 and FY2014?

GSA Response:

Please see answer provided by the Office of Management and Budget.

IT Acquisition Workforce. Between fiscal years 2002 and 2012, acquisition spending by the Federal Government expanded by 95 percent, from $264 billion to roughly $514 billion. While contract spending has risen dramatically, the number of acquisition professionals did not keep pace. Even more troubling, a significant portion of the current acquisition workforce will be eligible to retire over the next decade.

Q16: Do you believe that the government's acquisition workforce is adequate, in terms of size, experience, and expertise, to carry out the activities required for effective use of strategic sourcing, transition to the cloud, and shared services for Information Technology?

GSA Response:

The acquisition workforce (comprising contracting professionals, contracting officer's representatives, and program/project managers) has grown modestly over the last several years. OMB is encouraging agencies to retain these critical members of the Federal workforce in this tight budgetary environment because they can help agencies save money for mission critical support. Investment in our acquisition workforce is critical to ensure we have the necessary capabilities to execute agency missions.

For nearly 30 years, OMB has partnered with GSA to operate the Federal Acquisition Institute (FAI) in order to train and develop a professional and capable acquisition workforce. GSA works closely with OMB who leads agencies in an acquisition workforce planning process each year to ensure agencies understand their acquisition workforce and plan their training and development. Both GSA and OMB are committed to ensuring the acquisition workforce is adequate for executing IT acquisitions. FAI currently leads the Program/Project Managers (P/PM) Functional Advisory Board and has recommended that IT competencies be incorporated into the P/PM certification process for IT Program Managers.

Forty percent of the civilian agency 1102 workforce is able to retire in the next five years. Another third have fewer than five years of experience. GSA works with OMB and the civilian

agencies every day to ensure the workforce is recruited, trained, developed, and retained to deliver the best value for taxpayer dollars.

The U.S. Office of Personnel Management (OPM) and the Chief Human Capital Officers Council have designated acquisition one of the five Government-wide mission critical occupations that are strategic priorities for skills gap closure. OPM is partnering with the Federal Acquisition Institute (FAI) and Defense Acquisition University (DAU) to increase the percentage of the acquisition workforce that is certified to deliver effective support for agency contracting operations. Progress against this goal is reported on www.performance.gov as one of the President's Cross Agency Priority (CAP) Goals.

Contract duplication (i.e., many contracts for the same or similar services across the federal enterprise), especially in IT, is a major challenge facing the Federal procurement system. It increases costs for government and industry, costs that are ultimately borne by the taxpayer. Contract duplication increases bid and proposal, administration and overhead costs for all.

Q17: Duplicative cloud contracts are being established by various agencies for requirements such as infrastructure or cloud-brokerage services (e.g., GSA, DOI, DISA for infrastructure-as-a-service), wasting government & industry resources. What can be done about reducing the amount of duplication in contracting vehicles available to Federal agencies?

GSA Response:

Because agencies often have complex and unique requirements, ordering procedures, service level agreements, and financial systems, the use of our existing cloud Blanket Purchase Agreement (BPA) is proving difficult for some, leading them to enter into their own contracts. In addition, many agencies opted to move their e-mail to the cloud prior to GSA awarding the Email as a Service BPA. What GSA has been finding is that we have to pay close attention to creating extremely flexible acquisition vehicles that incorporate carefully gathered and implemented lessons learned.

Regarding promoting the use of governmentwide contracts as opposed to the proliferation of agency-specific vehicles, we suggest greater education of contracting officers as to the availability and pros and cons of using these contracts. In addition, we must eliminate agency barriers preventing the greater use of external contracts. For example, one agency requires their contracting officers to prepare a Determination and Findings when using external contracts. This requirement discourages busy contracting officers from using governmentwide contracts.

We suggest the review of Multiple-Award Contracts and governmentwide contracts, and increased scrutiny over the creation of single agency contract vehicles. The proliferation of single agency contract vehicles dilutes the government's buying power. Aggregated buying power can be leveraged through the use of GSA Governmentwide Acquisition Contracts and other pre-competed GSA contract vehicles. In addition, the use of GSA's pre-competed contract vehicles can shorten the procurement cycle. In an agency mission-centric culture, it is

characteristic that an agency program office/requiring activity will seek and demand the shortest and quickest road to accomplish its mission. The contracting activity for single agency vehicles generally takes one to two years to award.

<u>Government duplication of already existing software capabilities</u> **The Committee is aware of numerous instances where the government has decided to "make" or develop its own software systems, despite the ready availability of commercially viable products.**

- **For example, GSA has determined to build a government reverse auction platform, despite the availability of commercial reverse auction software packages.**
- **OPM has developed HR software, which it is offering to other federal agencies, despite the availability of mature HR software packages in the private sector.**
- **OMB, in its recent policy memorandum M-13-08, appears to be focused upon government development of financial management systems, despite the ready availability of commercial alternatives.**

Q18: Why did GSA decide to build its own internal reverse auction tool (ReverseAuctions.gsa.gov) ("RA platform") rather than engage existing commercially available solutions?

GSA Response:

GSA conducted a basic make or buy decision considering the cost of internal development (making) versus the cost of purchasing commercial offerings (buying). Although commercial fee models varied, the overall cost to the government was determined to be lower if GSA developed an offering in-house. In-house development costs were low because the GSA's Reverse Auction Platform is built on existing GSA IT infrastructure and leverages GSA eBuy and GSAAuctions.gov software and expertise.

a. **What was the cost to GSA of that initial development effort?**

   The initial development effort cost about $600,000 because we were able to redeploy existing GSA infrastructure for a modified purpose.

b. **Did GSA personnel access other reverse auction provider websites or software for purposes of, or related to, researching, designing or building the RA platform?**

   As part of market research, GSA reviewed a variety of publicly available websites and other information related to electronic auction and reverse auction concepts. GSA contracts and BPAs are also available on a commercial reverse auction website.

c. **What are the ongoing annual costs of maintaining the system and continuing to develop system enhancements to the RA platform?**

As deployed today, the annual maintenance costs are approximately $300,000. On the basis of customer feedback and customer usage of the platform and enhancements, an additional $3 million in development is planned for FY 2014, inclusive of maintenance for the system as it exists today. Once complete, the on-going maintenance costs of the system are expected to be approximately $1 million per year.

d. What cost/benefit analysis did GSA conduct prior to contracting out the design and development of the RA platform?

It should be noted that the GSA Reverse Auction Platform is a derivative of two existing GSA web platforms: GSA eBuy and GSAAuctions. Government full time equivalent employees and contractor resources were used to modify existing GSA technology to perform a new function.

On the basis of market research, GSA found the current reverse auction market is approximately $1 to 2 billion in auction value per year. Considering commercial fees range from 1 to 3 percent of the auction value, GSA estimates the government spends between $10 million ($1 billion times 1 percent) and $60 million (2 billion times 3 percent) per year on reverse auction services. The potential savings, low cost, and low risk associated with the reuse of existing GSA technology led to the decision to create an in-house system.

Secondary "soft benefits" were also considered. Specifically, the ability to collect transaction-level pricing data is a key feature that will help drive better buying across government. Additionally, the GSA Reverse Auction Platform is a value-added feature of the GSA Multiple Award Schedules program and other GSA contracts. Making GSA contracts more valuable will reduce the need for other Agencies to award similar contracts.

Q19: GSA has clearly indicated that its RA platform is competing with commercial platforms, highlighting "No Additional Fees" as a management benefit in its overview slide deck. What are GSA's long-term goals with respect to its RA platform's effect on commercial providers?

GSA Response:

It is the mission of GSA to "deliver the best value in real estate, acquisition, and technology services to government and the American people." Providing a Reverse Auction Platform within our existing fee structure increases GSA's value to customers, and therefore, is consistent with the mission of GSA. GSA's long-term goal is to fulfill our mission. Commercial providers are considered in the context of the "make or buy decision" GSA conducted when determining which approach would be more valuable to government and the American people.

Q20: Does OMB or the CIO Council review government initiatives to develop government IT solutions when commercial alternatives are available? Does the government utilize any form of "make/buy" analysis?

GSA Response:

Please see answer provided by the Office of Management and Budget.

Q21: Under what circumstances is the government better suited to develop and deploy internal IT systems than to acquire these requirements form the commercial market?

Whether private sector or government, the decision to in-source or to outsource the development and deployment of IT systems is a complex one. As needs for systems are identified, a rather structured decision process is called for in order to consider the many factors that will constitute the optimal approach and assure results that adequately meet the agency's requirements. A critical success factor independent of deciding whether to build or buy is identifying the right mix of contractors and Federal employees for effective support of the system throughout its life cycle, and ensuring that project management and contract oversight reflect sufficient expertise to validate that commercial work products and performance meet contract requirements and standards, scheduled milestones, and budget constraints over the course of the system/application lifecycle.